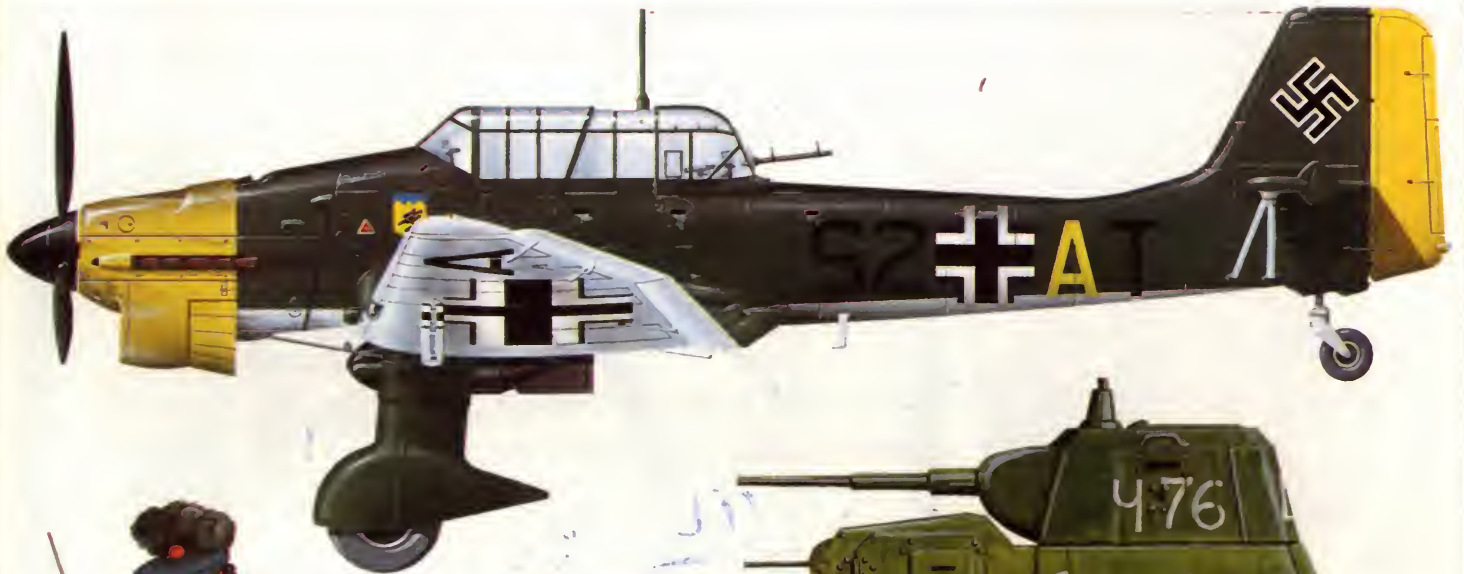


January 1976 30p

**AIRFIX**

*magazine for plastic modellers*

**Inside:** Making the BA 10 armoured car and Russian trucks, Tomahawk colours and Northern Militaire report



**This month's star feature — modelling the Ju 87B**



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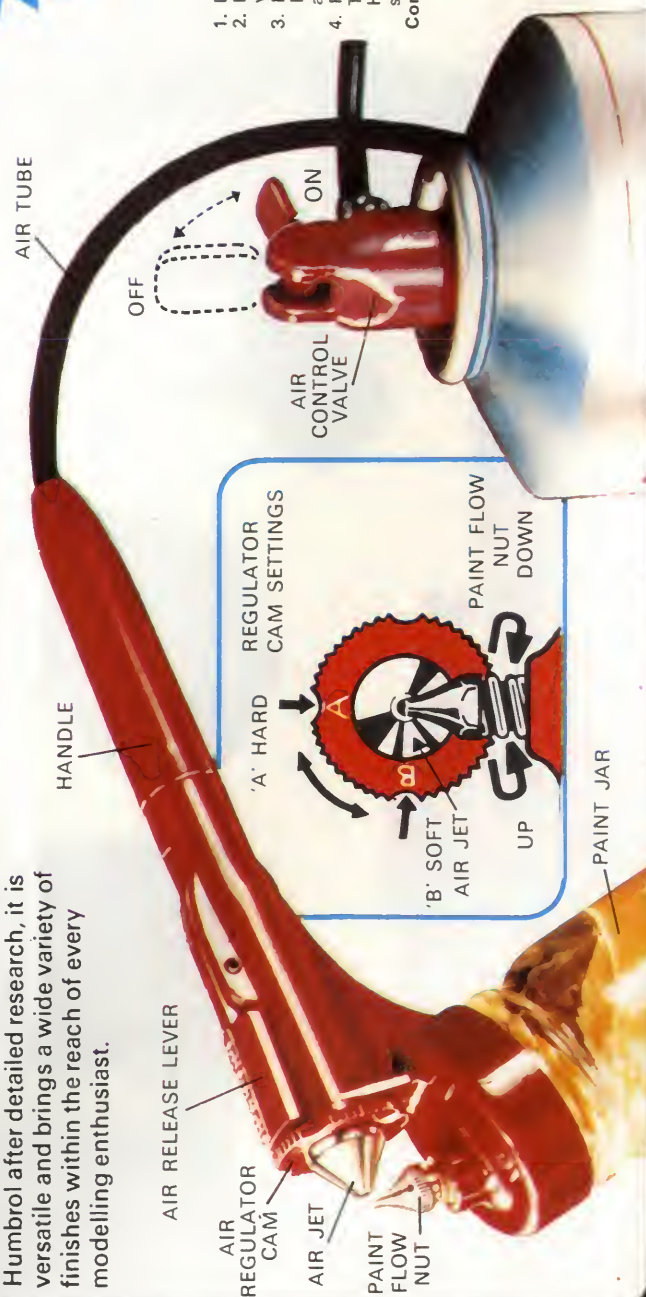
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### On the cover

**Top** Junkers Ju 87B Stuka belonging to the Staffelfkapitan of 9/StG 77 as modelled by Bryan Philpott on pages 286-292 inside (painting by Martin Holbrook). **Left** Officer of the 78th Highland Regiment of Foot circa 1778, as described on pages 270-273 inside (painting by Bryan Fosten). **Centre** Russian BA 10 armoured car in typical 1942 markings as modelled on pages 281-285 (painting by Gerald Scarborough). **Bottom** Consolidated B-24J Liberator N94459/42-50551 belonging to 'Yesterday's Air Force' of Chino, USA, while being overhauled at Duxford during spring 1975. Markings of a machine from 566 Bomb Squadron, 389 Bomb Group (photo by Michael J. F. Bowyer).

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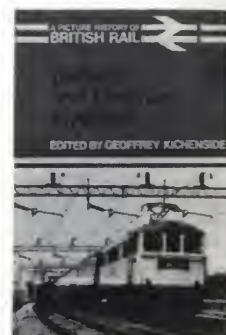
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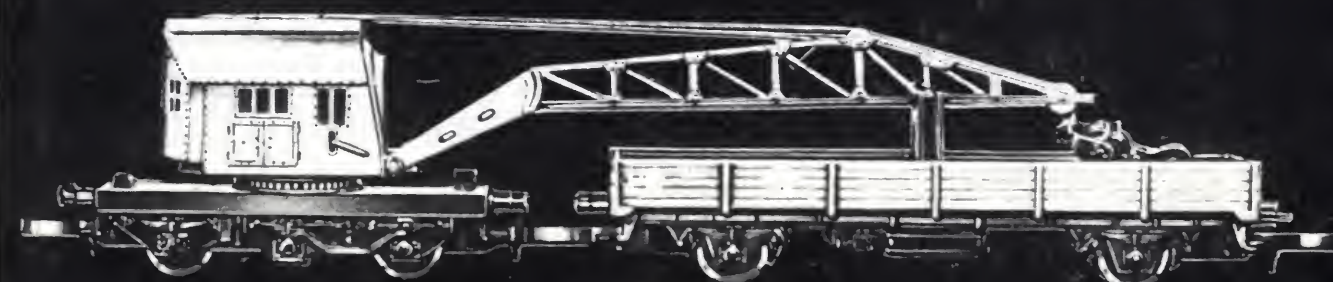
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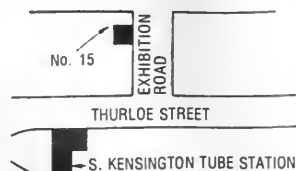
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## A letter from the Editor

WELCOME TO THE new *Airfix Magazine*, and a special welcome to all new readers. This is the first issue to be produced to the larger A4 page size, and we are sure you will all like it.

Our editorial policy, as stated in our very first issue back in June 1960, has always been and remains one of assisting our readers 'towards a programme of more ambitious and satisfying modelling and to better and up-to-date knowledge of the ships, cars, aeroplanes, trains and other things and people on which models are based'. We feel that this enlarged format will enable us to do an even better job than in the past. Photographs are larger, enabling more detail to be seen, and the bigger page area means that we shall be able, from time to time, to feature scale conversion plans for those models which were too large to publish within the old page size.

It is interesting, at the beginning of a new year, to cast a brief eye back over the last 15 years of modelling developments. In January 1961 *Airfix* had just released their original Douglas Dakota, Hawker Hunter and Defiant kits, while *Airfix Magazine* ran one of the first photographs of the Hawker P 1127, forerunner of the Harrier, amongst other features on ships, trains, motor racing and stamp collecting.

Aircraft have always been popular, and the one feature of the magazine which has remained constant throughout the years is 'In the air', but other things have changed radically. The early 'sixties saw the hey-day of slot-car racing, and *Airfix Magazine* regularly featured articles on building layouts and motorising cars. Railway modelling was also popular with our readers, thanks to the large range of *Airfix* stock and accessories which was then available — and which is shortly, we understand, to return in a big way.

The single most outstanding development over these 15 years, however, has undoubtedly been the staggering growth of interest in all aspects of military vehicle and figure modelling. The first *Airfix* tank kit, the Panther, appeared in June 1961, hotly followed by the Sherman and Churchill, which are all as popular today as when they were first released. But military modelling really 'got off the ground' when *Airfix Magazine* began featuring tank and AFV conversion articles in 1962. Since

then, military vehicle modelling has grown to such an extent that it is second in popularity only to modelling World War 2 aircraft, while figure modelling and wargaming are also 'boom' areas.

Apart from changing fields of interest, the last 15 years have also seen a quite staggering improvement in modelling standards. In 1960 it was enough for most modellers to assemble a kit correctly, paint it and apply the decals supplied with the kit. Few dreamed of adding such touches as opened cockpit canopies or drooping flaps, or of conversions beyond such simple additions as S-Guns to a Hurricane. There were no vacuum-formed conversion kits, no readily available plastic card even, no specialist commercial decal manufacturers, and very few decent modelling reference books.

Today, given the availability of modelling tools and accessories from a wide variety of sources, the growth of societies such as the International Plastic Modellers Society and the stimulus to better modelling provided by this magazine and other publications, it is only the complete beginner who is content to assemble a kit 'straight from the box'. Similarly, given the rate at which new models appear on the model shop shelves, it is now much more difficult for us to dream up conversion articles!

It will be very interesting to see what the next 15 years will produce. What new field of interest lies just around the corner, waiting for some enterprising manufacturer to unlock its door? Perhaps it will be an increase of interest in, say, warships or science fiction subjects; perhaps in modelling the colourful but largely neglected aircraft of the inter-war period; or perhaps in some brand new sphere — commercial lorries, maybe, or horse-drawn carriages and wagons? Only time will tell. But needless to say, we at *Airfix Magazine* will be constantly seeking to interpret these trends and provide you, the modeller, with the information you require. You can help us in this — suggestions for articles on specific topics are always welcome (but please, if you expect a personal reply, do enclose a stamped self-addressed envelope with your letter).

In the meanwhile, happy modelling, and a prosperous New Year to all our readers.  
BRUCE QUARRIE

## Contributions to AIRFIX magazine: all readers please note

### Editorial contributions

Under this heading fall articles, photographs, letters to the editor for publication, and drawings. All such material should be addressed to the Editor, *Airfix Magazine*, PSL Publications Ltd, Bar Hill, Cambridge CB3 8EL. Before submitting full-length articles, it is advisable to query their suitability beforehand to avoid disappointment. All contributions should be accompanied by stamped, self-addressed envelopes for their return if they are unsuitable for publication. While every care is taken with editorial contributions, the publishers cannot be held responsible for their safe-keeping.

Editorial articles should ideally not exceed 1,500 words. Accompanying photographs should be at least Enprint size black and white. Colour prints cannot usually be used. Scale drawings and construction sketches, etc, should be drawn in black ink, with any caption material either lightly pencilled in or written on a transparent overlay.

Colour transparencies of any size from 35 mm up are always welcome for consideration for use on the front cover.

### Queries and comments

Queries relating to specific articles, or comments on points raised in them, should be addressed to the appropriate author, c/o *Airfix Magazine* at the above address.

General queries should be addressed to the Editor, who will endeavour to answer them or suggest reference sources wherever possible. Due to the amount of mail received, however, it may be some time before a reply can be despatched.

All such above queries should be accompanied by stamped, self-addressed envelopes.

### Airfix Products Ltd

All enquiries and complaints regarding products in the *Airfix* range, including toys and games as well as kits, should be addressed directly to Airfix Products Ltd, Haldane Place, Garratt Lane, London SW18 4NB.

### Advertisements

All queries and complaints relating to advertisements in *Airfix Magazine* should be addressed to the advertiser concerned in the first instance. In the event of a genuine complaint about service write to the Editor of *Airfix Magazine* at the above address. While we will make every effort to ensure satisfaction, we cannot be held responsible for any disputes which may arise.

### Back numbers

Stocks of many issues of *Airfix Magazine* dating back to 1969 are still available. For further information write to the Editor, explaining your particular interests, for details of articles in available issues. Please enclose an SAE.

**Make sure of receiving your monthly copy  
of AIRFIX magazine regularly—  
take out a subscription now, using  
the order form on page 316**





# Air, land and sea

compiled by the editor

THIS IS THE first article in a new *Airfix Magazine* feature which will include news and photographs of events and developments in aerial, naval and military transportation today. Month by month, it will report on new aircraft entering service with the world's air forces and airlines, squadron and colour scheme changes, and other related events of interest to modelers. Similarly, it will include news of

developments in all the other services — Army, Navy and Fleet Air Arm.

To a large extent this feature will be compiled by our existing correspondents, Peter Guiver and Terry Gander, together with Paul Beaver on naval affairs. But we would also like to involve you, our readers, in its compilation. If you live near an airfield, army camp or naval base, keep your eyes open for us, and if anything strikes

you as new and interesting, let us know. If you can photograph it too, all the better! Published contributions will be rewarded on the same basis as letters and photos printed on the 'Letters to the editor' page by free Airfix plastic construction kits of your choice (see page 306 for details).

We hope, too, from time to time, to include news of interest to railway modelers, veteran and vintage car and traction engine enthusiasts, so if you visit any rallies or meetings of topical interest, please let us know about them. We also welcome press releases from preservation societies, etc.

To kick off this first article, we received the following letter from aviation photographer Stephen Richards:

'I read with interest the comments put forward by Peter Guiver and Ian Dewar concerning the three-tone green camouflage scheme seen on a few 48TFW F-4D Phantoms. A statement made by one of the 48th's pilots recently could be the true explanation. He said that some of their F-4Ds were on an exchange visit to the 401TFW at Torrejon in Spain earlier in 1975, and whilst there received some maintenance. A lack of tan paint necessitated the use of the pea green, which will be replaced by tan next time the aircraft come up for overhaul.

'Still on the Phantom theme, a couple of points of interest to modellers are: first, that German Air Force F-4Fs, which now visit this country quite regularly, are noted to be fitted with the illuminated strips as first applied to USAF Phantoms. Two JG74 machines at Alconbury in June and one JG71 machine at Binbrook were so equipped. Second, RAF and RN Phantoms

Continued on page 266



Above left Phantom FGR2 XV396 'A' in 23 Squadron colours, photographed on October 31 1975 at Leuchars by Alan Carlaw. Note modified fin shape housing the ECM gear. Left The last line-up of 23 Squadron's Lightnings at Leuchars on the same day. Below Hawker Siddeley Hawk in camouflage and low-visibility markings overflying the Pyramids during its recent visit to Egypt.



## AIRFIX NEW MODELS FILE

Three nations—U.K., Germany and Italy—are combining to produce this high performance aircraft.

Known officially as Tornado, the two seater MRCA will fulfil six major roles in the R.A.F., German and Italian air forces and the German navy. These are close air support for ground forces; low-range low level strike; naval strike; air superiority; interception and reconnaissance.

To design, develop and produce the MRCA, Panavia was formed in March 1969 by the three airframe companies, British Aircraft Corporation, Messerschmitt-Bölkow-Blohm and Aeritalia. A similar arrangement exists for the advanced RB.199 engine—the company Turbo-Union Limited being formed by Rolls-Royce Limited, Motoren and Turbinen Union and Fiat.

MRCA's operational flexibility results from a combination of variable geometry wings, the powerful RB.199 turbofan engines and advanced electronics. Unswept, the swing-wings give the aircraft a short take-off and landing ability, while in the fully swept position transonic,

low-level, long distance missions can be made. Included in the electronics system is a terrain-following radar and an automatic target acquisition and weapon aiming system for single-pass attack in any weather—an important feature when flying strike missions in a hostile area.

This Airfix kit faithfully reproduces the swing-wing principle of the real aircraft. It also has movable tailplanes and swivelling under-wing weapon pylons. Guided missiles and the very latest cluster bombs are provided. Three sets of decals—second prototype, R.A.F. and German navy are included.

For up to date news and details of Airfix models get the *Airfix Magazine*.



**72nd Scale Series 4.**  
New to the world's biggest range of construction kits.

## MULTI-ROLE COMBAT AIRCRAFT

### Technical Details

Date of origin:	1974
Engine:	Two 8,500lb thrust Rolls-Royce RB.199s.
Top speed:	Mach 2.
Armament:	Two 27mm cannon plus seven external weapon stations.
Wingspan (swept):	28ft.2in.
Wingspan (unswept):	45ft.7½in.
Length:	54ft.10in.
Height:	18ft.8in.

## THE TORNADO THAT'S SWEEPING EUROPE.



Continued from page 264

are now appearing in greater numbers sporting the modified fin shape which encloses the ECM gear.'

This mod is clearly visible in the photo of Phantom FGR2 XV396 'A' spotted at Leuchars by Alan Carlaw. This machine appears in full 23 Squadron colours. 23 Squadron was, in fact, disbanded on October 31 as a Lightning unit, and although poor weather made photography difficult, Mr Carlaw has also sent us the accompanying photo of the final Lightning line-up. 23 Squadron reformed on November 27 at Coningsby, using Phantoms.

Our next photograph, courtesy of Hawker Siddeley Aviation, shows one of the new Hawk ground attack/trainers flying over the Pyramids during a four-day visit to Egypt last year. Four Egyptian Air Force pilots, including commanders of MiG-17 units, flew the aircraft from Almaza Air Base near Cairo. The visit was at the invitation of the Egyptian Air Force and followed three weeks of successful warm weather trials in Malta.

Next, from McDonnell — Douglas comes news that the corporation has begun delivering F-15 Eagles to the USAF in a new mottled grey paint scheme. The original air superiority blue gave way to the shaded grey colour scheme when Air Force tests proved that grey aircraft are less visible than sky-blue ones. Coupled with smoke-



F-15 Eagle in its new mottled grey paint scheme.

less engines, the new colour is claimed to give the F-15 a still greater edge in aerial combat.

From the Royal Air Force comes news that No 18 Squadron, which recently celebrated its 60th anniversary, returned to Germany in August to provide tactical and battlefield support facilities for the British Army of the Rhine. The squadron, which is equipped with Wessex HC Mk 2s, is unique among RAF Germany units since it is the only such unit specifically assigned to the

support of British ground forces.

Two Royal Naval Reserve minesweepers took part late last summer in trials of new deep minesweeping equipment off the Rock of Gibraltar. The ships, HMS Curzon (in the foreground of our picture) and HMS St David, are 'Coniston' Class coastal minesweepers crewed entirely by volunteer reserve personnel.

No 14 (Jaguar) Squadron, based at RAF Bruggen in Germany, has now been provided with new hardened shelters, as seen in the photograph on page 268. The squadron, together with No 17 at the same base, is currently working up to full operational status as No 14 (Phantom) Squadron runs down.

The 105 mm Light Gun is now in service with the Royal Artillery. The first battery to be issued with the new piece is 13 (Martinique 1809) Light Battery, Royal Artillery, based at Larkhill. This battery has a long and famous history from its acquisition of its Battle Title gained during the capture of Martinique back in 1809 up to its famous part in the hard-fought Battle of the Cauldron against the Afrika Korps in June 1942. 13 Light Battery will now be once more in public view as it has now taken on a new role as the 'display' battery for overseas sales demonstrations of the new gun which is being promoted as a possible export to many nations — some sales have already been made to as yet unspecified nations and others are in prospect. As an extra inducement to promote sales to nations that still have large stocks of existing

Continued on page 268



Above Among the visitors to RAF Gutersloh recently to celebrate the 60th anniversary of 18 Squadron were an RCAF Alouette, 230 Squadron RAF Puma, German Army CH-53, 72 Squadron RAF Wessex, 33 Squadron RAF Puma, German Air Force UH-1D and British Army Wessex. Below HMSs Curzon and St David steam past Gibraltar (Russ Whalley).



## AIRFIX NEW MODELS FILE

## HAWKER SIDDELEY HAWK

The Hawker Siddeley Hawk has been selected by the R.A.F. to replace the Gnat and Hunter in Training Command and will provide 'all-through' jet flying training from the basic to the advanced stage.

The Hawk's first flight was on August 21, 1974 and it is proving to be a very successful design. It is a tandem two-seat low-wing monoplane powered by a single Rolls-Royce/Turbomeca Adour engine of 5,340lb. thrust. Production is under way with an order for 175 aircraft from the R.A.F.

The Hawk has been designed with slow approach and landing speeds suitable for basic training, and high performance for advanced work.

The Airfix kit of the Hawk is a superb replica and includes a detailed

cockpit which even has a gunsight, optional position air-brake, fully detailed undercarriage bay and a wide selection of weapons for the ground attack version. Decals are provided for an R.A.F. ground attack aircraft and also for the development Hawk and a production R.A.F. trainer.

For up to date news and details of Airfix models get the Airfix Magazine.



**Hawker Siddeley Hawk  
72nd Scale Series 3.  
New to the world's biggest range  
of construction kits.**

### Technical Details

Date of origin:	1974.
Engine:	One 5,340lb thrust Rolls-Royce/Turbomeca Adour.
Top speed:	535 knots.
Service ceiling:	44,000ft.
Landing speed:	100 knots.
Wingspan:	30ft. 10in.
Length:	39ft. 2in.
Height:	14ft. 5in.

## THE HAWK THAT FOLLOWED THE GNAT.







Continued from page 266

American 105 mm ammunition, the Light Gun is being produced with an alternative barrel to fire American ammunition. This barrel is shorter than that designed to fire the modern British ammunition (also fired from the Abbott SP gun), and thus has a much shorter range than the Light Gun's normal 11 mile range, but it will enable

14 Squadron Jaguar parked in front of one of the new hardened shelters at RAF Bruggen (RAF Germany).

expensive existing stocks to be used up. The normal Light Gun barrel can then be easily fitted to fire the longer-range ammunition.

More news next month. In the meanwhile, let's hear from you. □



Above 13 (Martinique 1809) Light Battery in action with 105 mm Light Guns during a recent demonstration (MoD). Below A Harrier GR3 of No 1 Squadron, RAF Wittering, hovers over HMS Ark Royal during Harrier sea trials off the south coast recently (Leading Airman G. Wickremasinghe, HMS Ark Royal).



- 1 Afrika Korps Multipose
- 2 1:72 F-86D Sabre
- 3 1:144 A300B Airbus
- 4 1:72 HS Hawk
- 5 1:1200 Ark Royal

1

FOLLOWING CLOSELY on the heels of the first Multipose release (the British 8th Army) comes their formidable opponent, the German Afrika Korps, in 1:32 scale.

The Deutsche Afrika Korps was the result of the amalgamation of the 21st Panzer Division with the 15th Panzer Division, under the leadership of General Rommel in Tripoli 1941.

Under instructions from the German High Command, to conquer Egypt and the Suez Canal, the Afrika Korps (as they were known) advanced rapidly and it was not until the Battle of El Alamein in October 1942 that the British 8th Army was able to halt them.

This kit, as with the previous Multipose set, is moulded in white polystyrene and comes with a variety of equipment, uniforms, including tropical and steel helmets, high laced leather and canvas boots, and choice of weaponry. With over 100 pieces the kit makes up six figures in a variety of positions. Retail price is 55p.

Modellers requiring additional information on the history, organisation and uniforms of the Afrika Korps should read Bruce Quarrie's latest book, *Airfix Magazine Guide 12: Afrika Korps*, which also contains many figure and vehicle modelling ideas.

2

THE VERY colourful and aggressive looking F-86D Sabre jet with its 'sharks teeth' insignia, will be a welcome addition to many a model aircraft collection.

The story of the Sabre is one of success. Evolved from the classic F-86, America's first swept-wing jet, the F-86 Sabre Dog can lay claim to being the world's first single-seat all-weather interceptor.

It was designed and built as a pure interceptor at a time when the threat of a major Soviet manned bomber attack on North America was considered a distinct possibility.

The first prototype made its initial flight in December 1949, and by September 1955, 2,400 had been built. On July 16 1953, the

Just two of the many poses which can be assembled using the components in the new Airfix 8th Army Multipose kit, reviewed here last month.



# NEWS FROM AIRFIX

F-86D Sabre set a new world speed record of 715 mph, and by the late '50s this aircraft was in service with the air forces of Japan, Denmark and Turkey.

Designed from the original manufacturer's blueprints, this 49 part 1:72 scale construction kit comes with optional position air brakes, rocket pack, and drop tanks. Also included is a large sheet of very colourful transfers enabling the modeller to display the aircraft in a variety of squadron colours. Retail price is 38p.

Modellers requiring more information on the Sabre and its marking schemes in various air forces should read Michael Bowyer's detailed and well illustrated article in *Airfix Magazine Annual 5*, available from all good book and model shops, price £1.95.

3

UK, FRANCE, Germany, Holland and Spain got it together!

The A300B Airbus is a multi-national project involving five European countries and is a direct attempt to break into the American-dominated market for large civil airliners.

The thinking behind the project was to collectively design and build a European aircraft specifically for the expanding short and medium air routes which call for a large capacity economical wide bodied jet.

The programme was given the go-ahead in 1969 with production being divided between the five countries and utilising US-made engines assembled in France.

The twin-engined 300-seat Airbus entered service in 1974 with Air France, and other airlines due to fly the aircraft include Lufthansa, Iberia, Air Siam and Korean Airlines.

The Airfix kit, the latest in the 1:144 scale

Skyking series, contains over 90 parts and the finished model measures 15 inches long with a 12-inch wing span. Special



Even displayed with untrimmed decals and a minimal paint finish as in these two 'hand-out' shots, Airfix's new Crusader III (below) and SdKfz 250 (above) (reviewed last month) in 1:32 scale are superb models for the AFV enthusiast. Think of the conversion possibilities! — and watch out for PSL's new book *Classic AFVs No 1 — Crusader*, by John Milsom, John Sanders and Gerald Scarborough, available soon.

attention has been paid to the highly detailed engine and undercarriage, and the kit comes with a set of Air France markings. Retail price is £1.35.

4

BRITAIN'S LATEST ground attack / trainer, the Hawk is a tandem two-seat low-wing monoplane, powered by a 5,340 lb thrust Rolls-Royce/Turbomeca Adour engine. First order from the RAF of 175 to replace the Gnat and Hunter. Maximum speed of 535 knots and suitable for flying instruction and light strike duties.

This finely detailed 1:72 scale kit consists of 95 parts, a crew of two and has great detail on the undercarriage. Three alternative weapon loads are suggested, including 1,000 lb bombs, Matra rocket pod and 30 mm gun pod. In addition two 100 gallon external drop tanks are provided. Paint instructions and transfers are provided for trainer and camouflaged strike versions. Retail price is 55p.

A detailed modelling article on the Hawk, including scale plans, appeared in the December 1974 issue of *Airfix Magazine*.

5

THE FOURTH model in this clip together waterline series which gives modellers and wargamers the opportunity to re-enact famous sea battles, is of the famous aircraft carrier *Ark Royal*.

HMS *Ark Royal* was launched in 1937, and was frequently reported sunk by the German Navy. She took part in attacks on the *Graf Spee*, *Scharnhorst* and *Bismarck*. 'Ark' carried 72 aircraft including Fairey Fulmars and initially Skuas, and a complement of 1,575 men. Only one man was lost when she eventually sank after torpedo attack by the U-81 in November 1941.

The 42-piece kit clips together and comes complete with assembly instructions and painting guide. Retail price is 38p.





# British Army uniforms

## 1660-1900

Cuidich'n Righ (Help to the King) by Bryan Fosten

THE 78TH FOOT was raised in 1778 by Kenneth Mackenzie, the grandson of the fifth Earl of Seaforth. The old Earl forfeited his title because of his involvement with the Jacobite movement but Kenneth Mackenzie made amends with the King and Government, and as a result was permitted to re-purchase his family's great estates. He was subsequently created Earl of Seaforth in 1771 and, as a token of his gratitude, raised a regiment of foot.

The regiment, drawn mainly from the men of the Mackenzie Clan, became known as Seaforth's Highlanders and took the motto which heads this article. (Their second motto is Cabar Feidh — 'The horns of the deer'.)

Numbered the 78th in 1778, the regiment was re-numbered the 72nd in 1786. The 72nd won its spurs fighting in campaigns in India, serving with distinction in the 1790s in actions in Bangalore, Dindegul, Seringapatam and in Pondicherry. During the 19th Century it saw further action at Assaye, Maida and Java and in 1881 was combined with a further regiment numbered 78th to form the 1st and 2nd Battalions of the Seaforth Highlanders.

### Uniforms

The head-dress for the officers and rank and file of the centre or 'battalion' companies was the blue melton 'hummer' bonnet 'cocked up' into a pork-pie shape. The cap had a red woollen 'tourie' on the flat top and a wide band of white worsted mat-

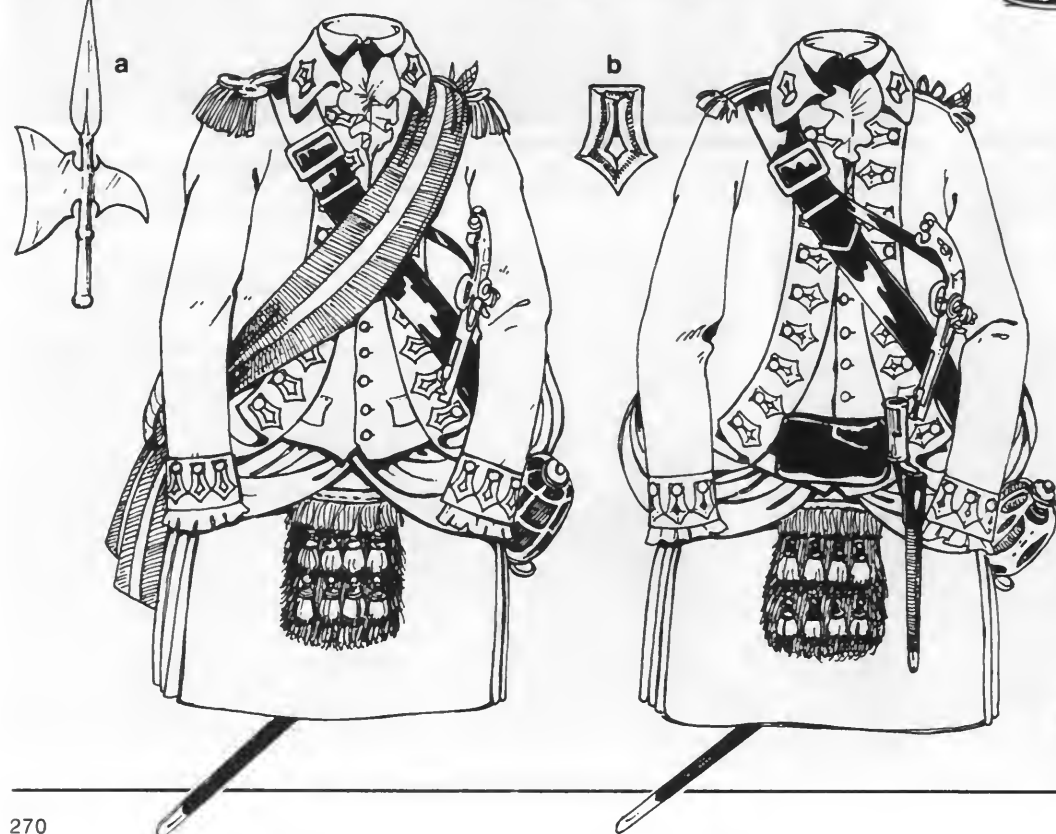
erial around the bottom dined with red and green. On the left side of this cap was a large black cockade with regimental button in its centre. Behind the cockade were fixed a few imitation black feathers. These, made to look like ostrich feathers, were said to be as good as, or better than, the real thing. They were made to curve over the top of the cap but still revealed its basic shape. The caps of the sergeants and the officers were the same pattern but they had proper black ostrich feathers. The cockades of the officers were black silk and they had silver buttons and rather more feathers than the sergeants.

The hair was worn powdered. It had side curls over the ears and the queue was clubbed for the centre companies and plaited and tucked up inside the cap for the grenadiers and the light infantry.

The coats were red (scarlet for the officers) and had rolled-over collars, narrow lapels and small cuffs in the orange-buff facing colour. The rank and file had 'bastion' shaped lace loops, white worsted with either a red or a blue stripe.

There is some doubt about the colour of the stripe in the lace, one authority quoting red and the other blue. The sergeants wore similar pattern lace but in silver and the officers had rich silver square-ended loops. The rank and file had the buttons and lace set on at equal distances and the officers in pairs. Buttons of the rank and file were pewter and the officers' buttons were

Continued on page 272



Above A private of the Battalion company. Left and below The general arrangement of the clothing for a private and sergeant. a The head of a sergeant's halberd. b The private's bastion lace. c The sergeant's wing. flank companies. d The private's pewter button. e The private's flank company wing. f The corporal's silk shoulder knot



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Continued from page 270

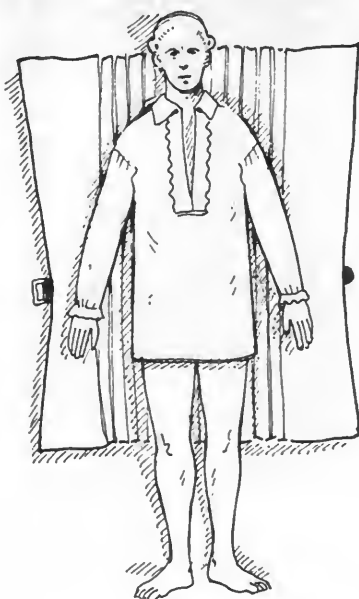
silver-plated, both bearing the numerals '78' encircled in an open spray of thistle.

Sergeants had white fringed epaulettes, the officers a pair of silver lace epaulettes and the corporals a white worsted cord loop on the right shoulder. Privates had facing colour shoulder straps edged with regimental lace with white woolly tufts at the shoulder ends.

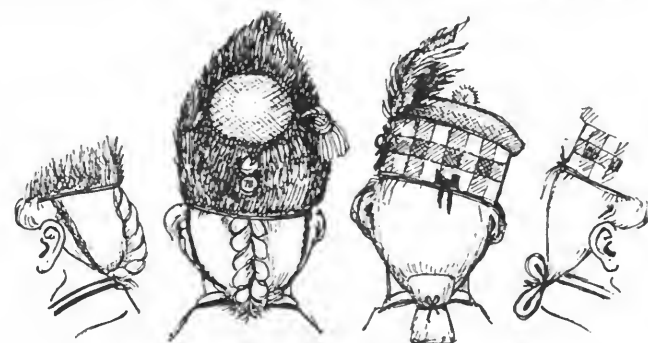
Sergeants, corporals and privates wore white single-breasted cloth waistcoats with two pockets and pewter buttons. The officers had double-breasted white waistcoats with squared buttons.

During this period the highlanders wore the 'Breacan-an-fheilidh' or belted plaid. There is a divergence of opinion as to which 'sett' was worn. Major Mackie-Scobie was convinced it was the approved Government pattern (as worn by the 42nd Black Watch) without embellishment. C. C. P. Lawson considered it was the Mackenzie pattern from the start. W. A. Thorburn, the current Curator of the Scottish United Services Museum, is of the opinion that it was likely to have been the Mackenzie tartan — that is the 42nd pattern with red and buff (or white) overstripes.

The belted plaid consisted of a rectangular piece of material (authorities differ as to how large — the consensus being about 15 or 16 feet long by 5 feet wide — that is two 30 inch widths sewn together. It was laid on the ground, over a belt. The cloth was gathered across the belt in pleats, leaving about 18 inches at either end unpleated (to form the smooth apron-like front). The man laid down on the length of cloth with the bottom edge about knee height. He then lifted the two outer ends of the belt and brought it round in front of his body and fastened it. When he stood up he put on his waistcoat, his coat and accoutrements leaving the 'tail' of the cloth hanging behind. When fully dressed the tail or 'Breacan' was brought up behind and fastened off at the left shoulder with the shoulder strap button. The right corner was left loose but rolled up and tucked in. On the march, or in inclement weather, the 'Breacan' was brought over both shoulders and used as a cape. The man could lie down and sleep in it.



*Hairstyles of the Grenadier and Battalion companies. Note the thin plaited cord that retains the cap on the head fixed under the hair (left).*



The purse or 'sporan' was quite small at this period and was made of natural goat-skin with two rows of four red-over-white tassels. It was worn on a narrow black leather belt which also supported the officer's jewelled dirk. The purses of the officers were slightly larger than the rank and file pattern and had silver-mounted clasps.

The sashes of the officers were crimson net and were worn over the left shoulder with the ends hanging on the right hip. Sergeants' sashes were crimson worsted with a central orange-buff stripe and were also worn over the left shoulder. The hose or 'Cadis' were made of white cloth. The hose were made in two pieces and were shaped to the leg and decorated with red criss-crossed stripes. They had no turnover and were supported with red, black edged, garters. The shoes were blackened and had steel buckles, silver for the officers with high tongues.

Officers and sergeants wore white gloves on parade, the officers wore silver plated gorgets when they were on duty.

Officers and the rank and file of the grenadier company wore black bearskin caps with black japanned front plates and red cloth patches set in the back. Officers' cords and tassels were silver and the rank and file wore white cords. The design of the front plate comprised the 'Deer's Head' with outspread antlers set between the 'G' and 'R' with the Royal Crown and Lion Badge above and a motto scroll overall lettered 'Nec Aspera Terrent'. The ornaments for the officers were silver-plated and for the rank and file were white metal. On the back of the cap, set below the red

cloth patch, a white worsted grenade was sewn bearing the number of the regiment.

The heavy fur cap was held on the head with a narrow leather strap or plaited cord which passed tightly under the hair at the back of the head.

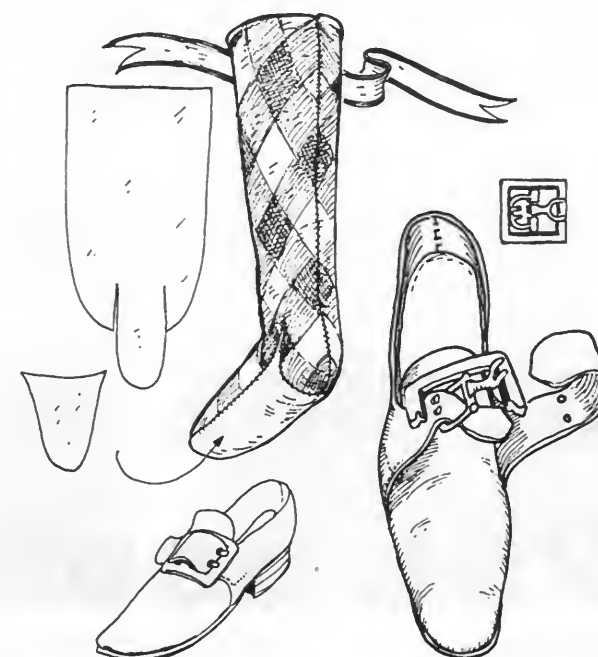
The coats of the grenadiers had shoulder 'wings' of red cloth edged and fringed and with darts of regimental lace. The sergeants had silver lace and fringes.

Grenadier officers and the sergeants carried fusils and wore black leather cartridge pouches on black leather waistbelts worn under the coats.

Officers, NCOs and men of the Light Infantry company also wore a special head-dress and carried fusils. The precise pattern cap worn by this regiment is not known but it seems reasonable to assume it was the universally used pattern; a black leather rounded skull with a sharply turned up front peak. It was similar to a jockey cap with its peak turned up flat against the crown. The front of the cap would almost certainly bear the 'GR' cypher with the Royal Crown but most likely with the addition of the regiment's special badge, in this

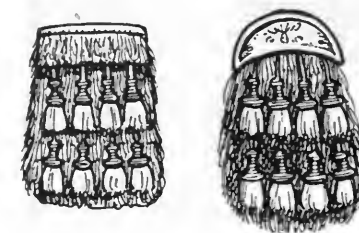
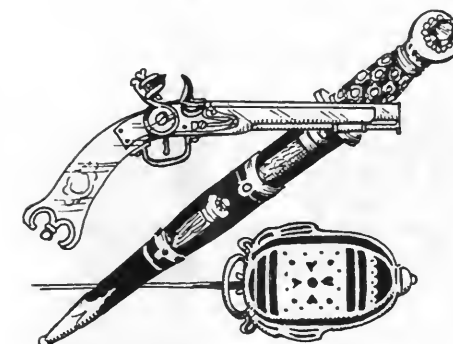
*The belted plaid was put on by laying on the ground and buckling the pleated cloth around the waist. The rest of the uniform was then put on. The top half of the material was then drawn up to the left shoulder and fastened to the shoulder strap button. The odd corners were then tucked in. Some officers allowed the corner on the left to hang down. This is to be seen in many portraits of the period.*

Highland hose was made from two pieces of material, seamed at the back and sole. The buckled shoes were still being made on one last to fit both left and right feet. The method of fitting the buckle is shown here.



*Head-dress. Centre is the officer's bonnet, top right is that of a private and below right, a sergeant's. Bottom left is a grenadier cap with grenade detail from the back of the cap below the red patch. Top left is a typical Light Infantry cap of the period. The device on the front is conjectural and it may have been on cloth of the facing colour.*

*On the left the all-steel Highland pistol with a typical officer's dirk of the period. Also shown is one of the many styles of broadsword hilt.*



*Right Waistcoats. Officer's on the right and the single-breasted style for the rank and file on the left. Left The officer's sporran, on the right, and that of the rank and file both had red over white tassels.*

case either the Deer's Head with spread antlers or a Thistle.

The skull of the Light Infantry cap was reinforced with either chain or metal studs. It was also likely to be further embellished with either ostrich plumes or a green feather plume.

Although the Amherst papers quoted by Strachan indicate that the regiment did not wear crossed belts, both P. W. Reynolds and C. C. P. Lawson indicate this form of equipment. The black pouch belt quite plain and the broadsword and bayonet belt with steel rectangular buckle, slide and tip. The Highland all-steel pistol was worn on a narrow strap over the right shoulder with the weapon high on the left breast. Some centre company officers wore pistols on the purse strap.

The broadsword had an all-steel pierced basket guard with red cloth lining and the black leather scabbard had steel mounts. Sergeants of centre companies carried halberds.

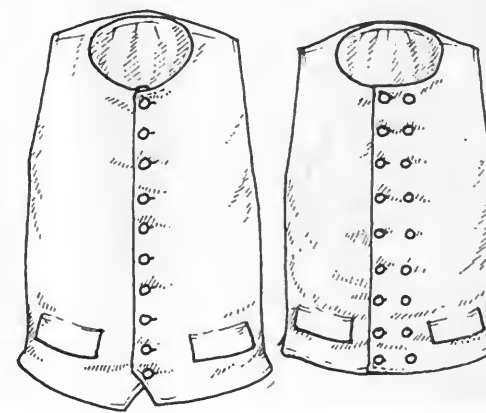
Pipers are likely to have worn the same clothing as the centre companies with grenadier-pattern wings. They were armed with the broadsword only. The pipes were covered in regimental tartan and had green drone ribbons.

Drummers were dressed in reversed clothing, orange-buff with red facings and with additional lace, and wore the grenadier cap. The badge on the back of the cap was probably a drum in lieu of the grenade. The drummers were armed with the broadsword and the drum was carried on a black leather carriage.

**Note** The 78th Foot from 1756-1763 was the Fraser's Highlanders who served at Luisberg and Quebec and had no connection with the regiment here described. There were several regiments with the number 72. One existed from 1756-1763, another in 1764-1765 was known as the 72nd Foot (Invalids), yet another from 1777-1784 was the 72nd Foot (Royal Manchester Volunteers).

## Sources

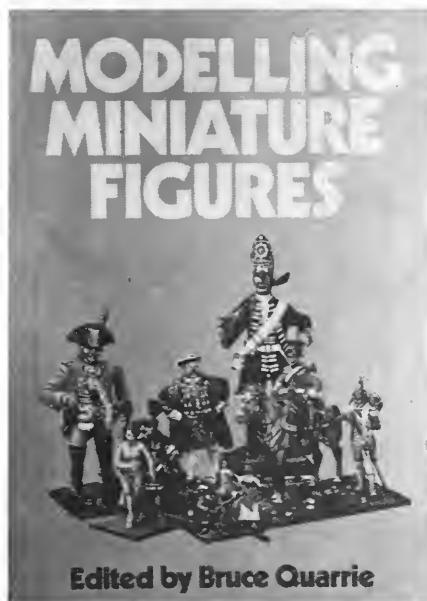
P. W. Reynolds MSS; Hastings Irwin MSS; Pilkington Jackson's statuette. SUS Museum Edinburgh; W. Y. Carman's *British Military Uniforms from Contemporary Sources*; C. C. P. Lawson's *Uniforms of the British Army*; Journal of the Society for Army Historical Research; *British Military Uniforms 1768-1796*, by Hew Strachan; and Regimental histories and records.







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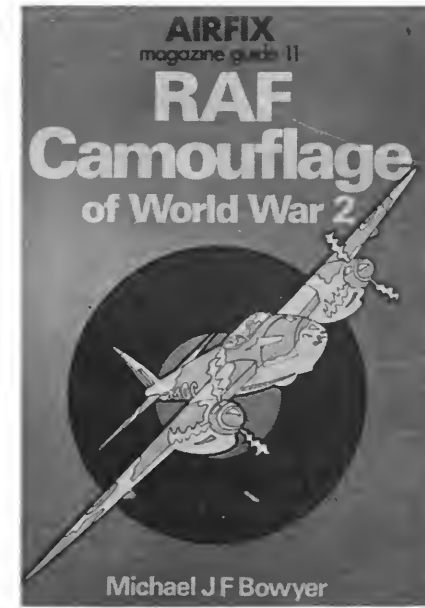
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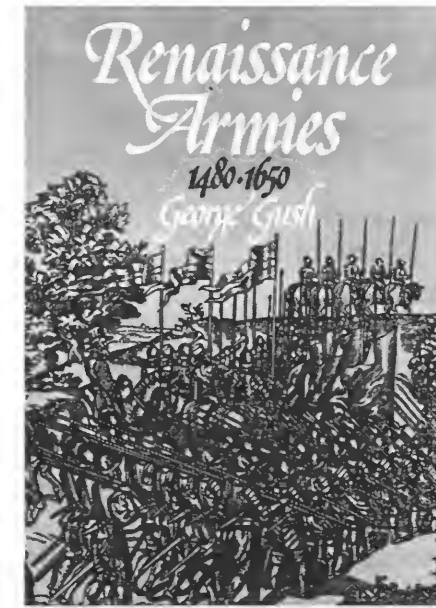
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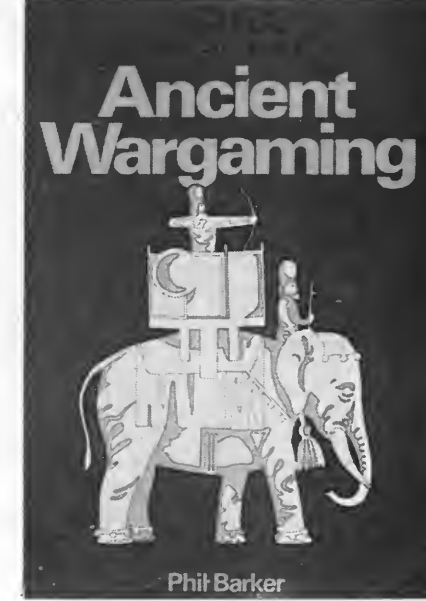
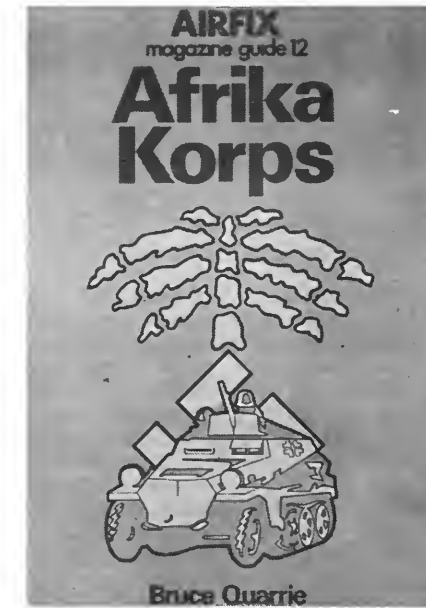
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A1/76



# Operation Sealion as a wargame

This month, **Terry Wise** discusses construction of some nautical models for your invasion

THE FIRST PROBLEM confronting anyone wishing to fight Sealion as a wargames campaign is the lack of maritime models in the correct scale and of an appearance suitable for 1940. As the Germans did have a small number of custom-built landing craft, the Airfix LCM3 kit could be used to land the small amount of heavy armour involved, and there is also a range of river and harbour craft kits made by the German firm of Wiad (tug, ferry, and three types of barge) in 1:87 scale which is ideal for Sealion, although very difficult to obtain and costing about £1.50 per kit. On the credit side these models have a German appearance and are of the same type as the craft earmarked for the invasion of Britain.

Apart from the above there do not seem to be any suitable models on the market, but a keen scrutiny of toy shops and packaging will yield all that is needed for the brief appearances made by invasion craft during a campaign. The photos give all the necessary details for forming a fleet of barges, launches, tugs and fishing boats.

That just leaves the U-tanks to complete the amphibious side of the preparations. Max Hundleby of the MAFVA has kindly given permission to re-draw his 1:76 scale drawings (originally published in *Tankette*) of a PzKpfw II flotation collar, Fig 1, and these four views enable a collar to be modelled with ease. (The drawings are based on a photo and intelligent deduction.) Another type of flotation rig, using two separate floats secured to the tank's sides, appears in plate 3 of Richard Cox's book, *Sealion*. These are also simple to make but not so easy to fix as a temporary feature.

A picture of a PzKpfw III tauchpanzer with snorkel fitting also appears in plate 3 of *Sealion*. Here the turret seems to have been made watertight merely by sealing all openings but, according to Max's extensive researches into this subject, the final version had the entire turret sealed within a

rubber 'cap', from which issued the snorkel's air hose. Fig 2, also reproduced by permission of Max Hundleby, shows the snorkel detail and true scale length of hose.

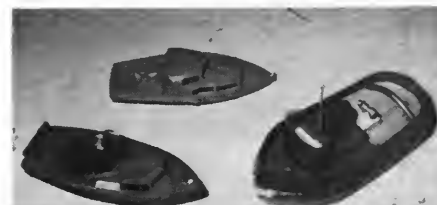
Wargames figures for the campaign may be easily selected from the lists of the various manufacturers and there is a good range of German armour available for the land fighting which will follow a successful invasion, but there is a serious shortage of transport, artillery pieces and British armour suitable for the 1940 period. One is either a perfectionist, in which case there will be many weeks of scratch-building ahead, or one settles for a compromise. If you wargame only in the World War 2 era then it would be worth scratch-building, but this period is the lesser of my wargaming interests, Sealion was an isolated venture into the early war years, and I did not wish to either repaint my armies or remodel them entirely just for one campaign. I trust, therefore, that readers will excuse my mottle camouflage and lack of some 1940 items.

The German forces would have brought few soft-skinned vehicles with them initially and I used mainly the Minitanks motor-cycles and sidecar combinations and the Airfix Kubelwagen for early mobility. The new Minitanks Opel Blitz 3-ton truck could be used for the petrol and ammo lorries: the model was not on the market at the time of my campaigning, and I used the US 6 x 6 cargo truck by the same firm. British transport was also scarce at this date, as are suitable models! Again I used Minitanks 6 x 6 cargo trucks but the enthusiastic

*Invasion fleet in action. The launches towed the assault boats, the tug and fishing boats the barges and pontoon raft. In the foreground a PzKpfw II with flotation collar (launched from a barge further out) heads for the beach, and in the right background a PzKpfw III tauchpanzer attacks the railway line.*

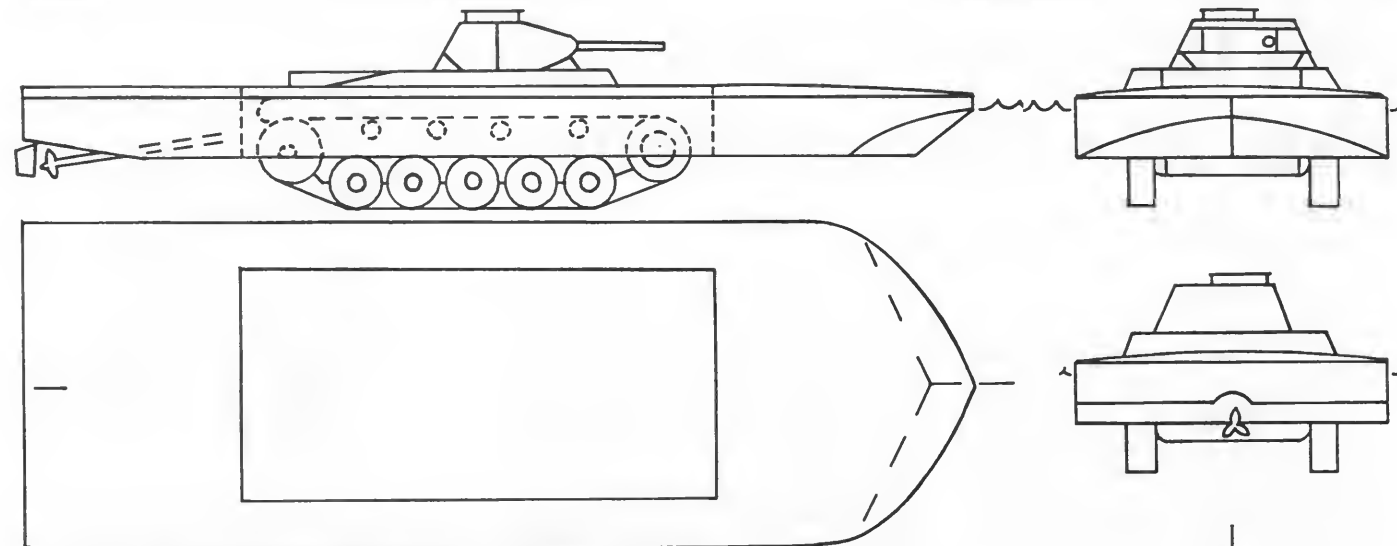


**Above** The basis of my 'fleet': tug and launch purchased at a toy shop for 25p each; and in the background a RNLI boat which once held a miniature brandy bottle. **Below** The launch was top heavy and had a modern, pleasure craft appearance. This was countered by removing part of the cabin (compare with original in background), blanking out a window and adding a Plasticine floor and a towing bar. The result was a sea-going launch of a working type. The tug had a balsa deck added aft, also an extension to the superstructure, a towing bar, winch (metal Plasticine pump), mast and windscreen round the bridge — which had the top cut out and a floor added inside.



modeller could scratch-build or build new bodies on the Airfix Bedford and AEC chassis (see *Airfix Magazine* February 1975 (3-tonner, 30 and 15 cwt); May 1971 (QL troop carrier); February 1971 (scratch-built Ford Portee); December 1970 (Austin 3-tonner). One point well worth remembering, and which opens up a new field of models: the British Army was forced to use large numbers of civilian vehicles for transport at this time (as was the Home Guard), while the Germans would have commandeered any vehicles they could find.

In the artillery field we have the 88 mm and SdKfz 7, the 25 pdr and Quad, and the 5.5-inch gun, all inexpensive and readily available from Airfix. Nitto make a Pak 37 and 105 mm gun; Minitanks a fine 150 mm howitzer. A German 75 mm howitzer can be converted from the Airfix ACW gun (see article in *Airfix Magazine* for January 1971). The same article describes conversion of the ACW limber into the light field cart which was issued to all infantry formations from company level upwards. It is also worth remembering that even by 1941 most 150 mm field artillery was still horse-drawn and horse teams are easily made up (there was an article on German horse-drawn transport in *Airfix Magazine* for September 1969; again using the ACW set). The 2 pdr anti-tank gun of the British Army is described for scratch-building in *Airfix Magazine* for December 1974. The first of the Home Guard's heavy weapons (the Blacker Bombard) was not in service until autumn 1940. Mortars and machine-guns are available in the various sets of figures and there is a wide range of appropriate aircraft in the Airfix catalogue, or you could use the new 1:350 scale aircraft by Helmet Products.



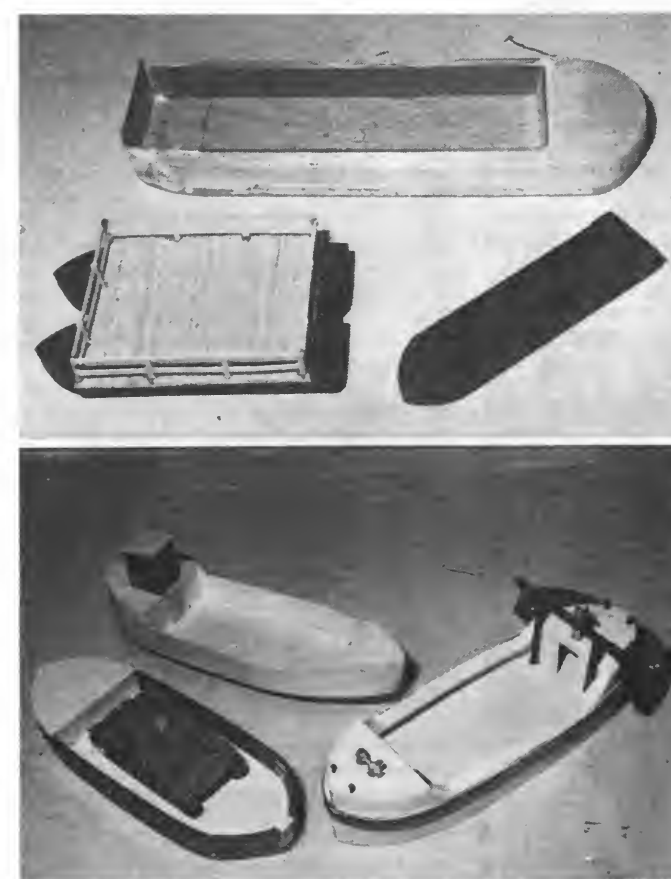
**Left** Additional craft based on date boxes (save them this Christmas) and Airfix Pontoon Bridge pontoons, with balsa additions. **Below left** Cut-down, the RNLI boat yielded the foreground barge with converted bow for landing armour, and the boat with 'dovits' for assault dinghies (from the Airfix US Marines set), while the background fishing boat is mainly scratch-built from card. **Below** completed tug and boat with davits.

**Above Fig 1** (1:76 scale)

**Right Fig 2**

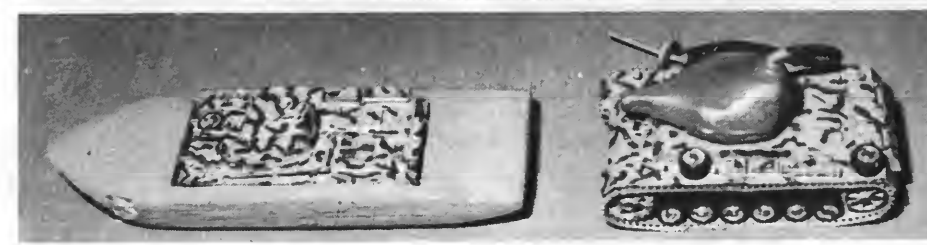
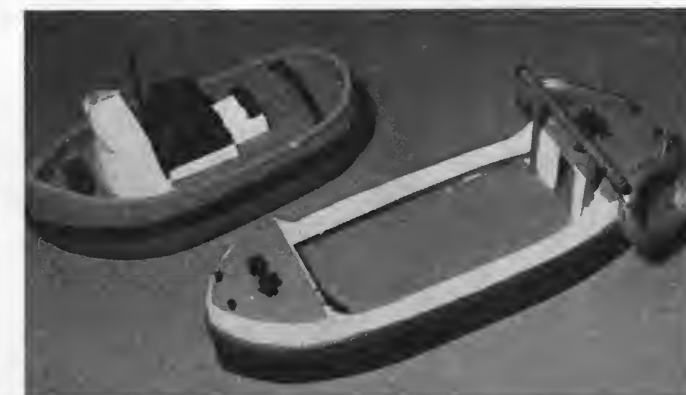
**Below Fig 3**

Turret ring



The Matilda is the only British tank of the period available as a kit and I must confess to making do with this one type; there would have been very little effective British armour able to reach the main invasion area in time if the railways were bombed, and the Matilda is a good representative. Full plans in 1:35 scale for scratch-building a Cruiser Mark III (*Military Modelling*, July 1975) could be used for 1:76 work, and there are also some ideas for scratch-building light tanks in John Sandars' marvellous series on the 8th Army, published in past issues of *Airfix Magazine*, but unless you are an armour enthusiast I would leave such scratch-building until the models arrive in a battle situation; you never know, they might not get a chance to fight!

**Below** PzKpfw II model with flotation collar made from the plans above, and PzKpfw III tauchpanzer.





# US infantryman of the Mexican War

Another pleasing figure conversion from Martin Windrow and Gerry Embleton

THE BACKBONE of the armies of Zachary Taylor and Winfield Scott during the Mexican-American War were the 16 regiments of US regular infantry. This force was insufficient, and mounted and artillery regiments were also pressed into the infantry role during the war. It is undeniable that the performance of the state volunteer regiments which bulked out the regular forces was patchy in the extreme. Some, like Colonel Jefferson Davis's 1st Mississippi Regiment (Rifle Volunteers), acquitted themselves very well; the Mississippians saved the day at Buena Vista, at one point charging Mexican cavalry on foot! But there were others, probably the majority, whose steadiness in battle and discipline on the march and in camp could not be relied upon, and the serious fighting was usually entrusted to the regulars.

The 3rd Infantry began the war in Zachary Taylor's 'Army of Occupation' on the Rio Grande. It consisted of ten companies each of a captain, a first lieutenant, two second lieutenants, four sergeants, four corporals, two musicians and about 100 privates. It was probably much like the rest of the army, in comprising about 50 per cent relatively recent foreign immigrants, with many Irish and Germans; the regular infantry was largely recruited from urban immigrants. The regiment fought in the fierce street battles which attended the taking of Monterey in September 1846; like the rest of Zach Taylor's regular infantry, it was later transferred to the command of Win-

field Scott for the Vera Cruz landings in March 1847, and fought from that point on in Twigg's Brigade. It served at Vera Cruz and Cerro Gordo, at Churubusco, and a detachment fought at Molino del Rey. (At Cerro Gordo one of the units thrown into action by Santa Anna was the 11th Mexican Regular Infantry — see last month's article in this series.)

It is very straightforward to convert an Airfix 95th Rifleman kit into a US regular infantryman of the Mexican War, and with little trouble a most colourful and pleasing model can be produced. You will need a Rifleman kit, a spare canteen, musket and bayonet scabbard from the American War of Independence Continental infantryman kit, plus some plastic card and filler.

Animation is up to you, but we found that by 'mixing legs' from the Rifleman an unusual and lifelike pose could be achieved. Use the left kneeling and the right standing leg together; minimal filling and filling will fair these together nicely, giving a stance in which the soldier rests his left leg on a rock, pile of rubble, corpse, box, or anything else that takes your fancy, while he cocks his musket and awaits an enemy attack. Next, stick together the two halves of the torso, and when dry trim off the two outside rows of tunic buttons. Cement the torso to the legs and set aside to dry while doing some trimming or sub-assembly of arms or equipment. When the main body is set, you must cut off the skirts at the rear of the Rifleman's tunic. Mark a



Rough sketch of fatigue cap and collar braid detail.

line which exactly continues the straight bottom of the front of the tunic right around the back, and cut with a razor saw or craft knife. When the tails have been removed you must fill the area from the new rear waist down to the buttocks — which in the kit moulding are, shall we say, vestigial — to make room for the original coat tails. Use a blob of Green Stuff or whatever compound you prefer, and allow to set thoroughly before filing to shape. When cleaning up this area, take the opportunity to carve and file the spat detail from the boots.

The arms of the Rifleman can be used, but when the hands are firmly set in place trim all cuff detail away. The jacket of the US infantryman has no separate cuffs. The Rifleman's head can now be set in place, looking out along the eventual line of the musket. When firmly set, start work on the fatigue cap. This is a little peaked cap rather similar to a World War 1 German Officer's *mütze* in shape. Stick the peak of the Rifleman's shako to the bow first. Take the Rifleman's canteen, and trim and file off all the edge detail, to make a smooth little 'pill' of plastic, which is exactly the right size for the band of the cap; cement it in place on the head, butting firmly into the curve of the rear of the peak. When dry, apply a blob of Green Stuff to the top, and while still soft shape it into the crown of the cap with a dampened knife or toothpick, allowing it to ooze slightly down around the edges of the band. Set aside to dry for a generous period before final filing to shape. If you are a real perfectionist you might like to add the ear and neck flap, usually worn tied up around the band of this cap — see the rough sketch herewith.

Your figure is now complete except for the equipment, which is as follows. A waistbelt was worn by these troops, slightly narrower than the single crossbelt worn over the left shoulder to support the cartridge box. Take the dimensions from the Rifleman instructions, and use the Rifleman's cartridge box. A round plate was worn on the crossbelt in the centre of the

Continued on page 280

Front and rear views of the completed figure.



# Three P51 Mustangs in one punchy kit

## See-Through Missile Sub

The US Navy's "George Washington" class subs were the first to fire missiles while submerged. Nuclear powered, able to stay underwater indefinitely and their 16 Polaris missiles have a range of 1,200 miles. Revell's "George Washington" kit builds up into a powerful model 18" long, with a cutaway hull which lets you in on all that top-secret hardware. You can see the nuclear power plant, the missile launchers, and the instrument and chart room and more. The kit includes two Polaris missiles, moveable control surfaces, moveable periscope, removeable Reactor Room Shield, and US Navy markings for all five subs in the class: George Washington, Abraham Lincoln, Patrick Henry, Robert E. Lee and Theodore Roosevelt.

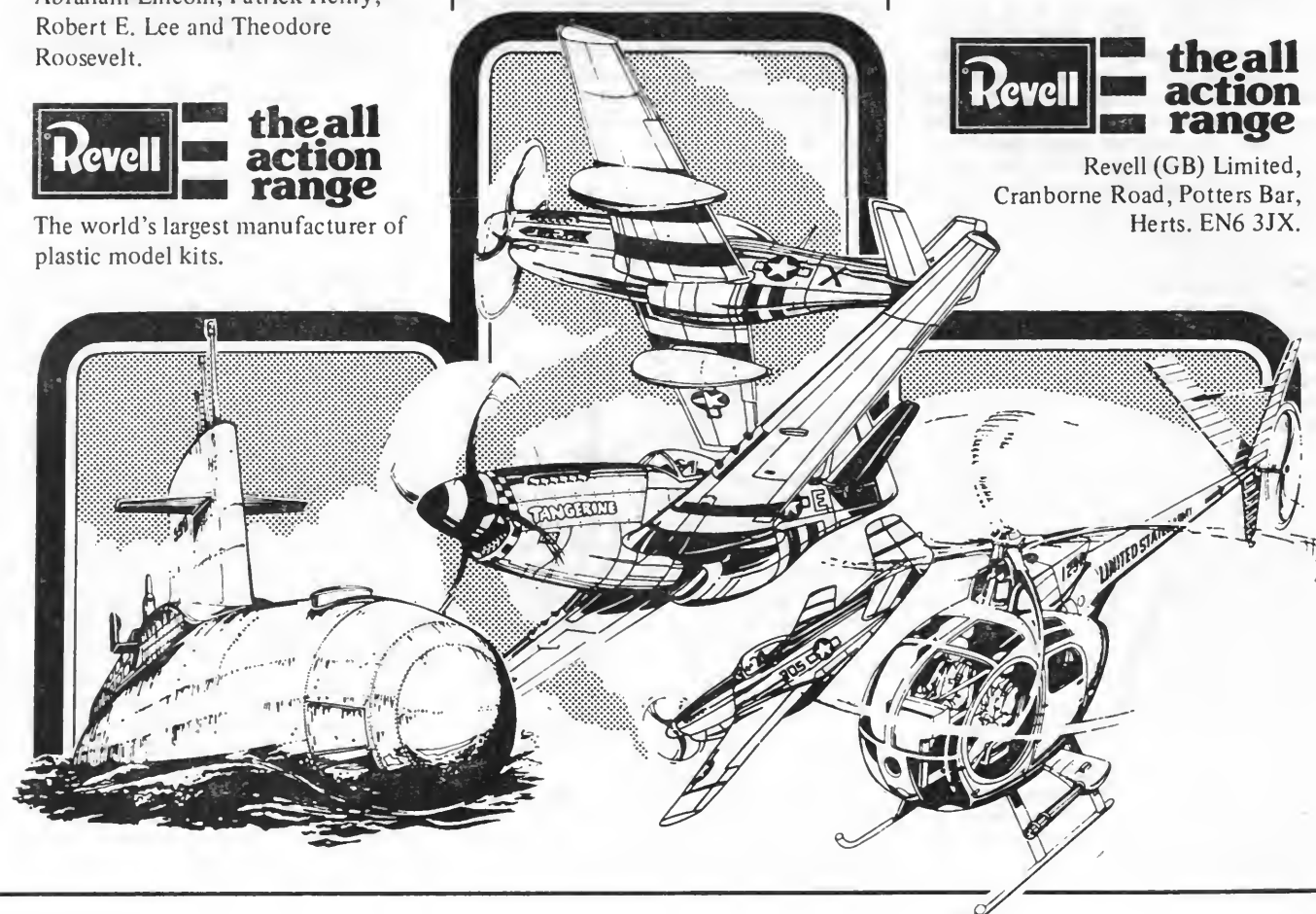
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The world's largest manufacturer of plastic model kits.

During World War II 7,956 Mustang P-51Ds were built, and this Revell "Collectors Choice" kit gives you a choice of three of them. A Mustang called "Tangerine" belonging to the England-based 357th Fighter Group. Or "Texas Terror" from the 355th. Or an Iwo Jima based P-51D of the 21st Fighter Group. Choose the plane you want to build, select your decals and follow the colour scheme on the three-way "spotter chart" painting guide. It's your choice. And it's your choice right through Revell's 3-in-1 range, with extra decals and in many kits extra parts too. So far there are 16 kits in the series, famous fighters from two world wars, all in super-detailed 1/72nd scale. And there'll be more "Collectors Choice" kits to come. Look out for them at your local model store.

**Revell** the all action range

Fine model kits



## Gunbus for the flying Cavalry!

In 1966 the egg-shaped Hughes Cayuse was holder of no less than 23 world records. That's the measure of this tough, nimble little helicopter's performance. It's even been known to fly into trees and still limp home! Built to a US Army brief which called for low initial and operating costs but high performance, the Cayuse is both a lethal gunbus and a nippy executive transport. And you can make either military or civil variants from this 1/32nd scale kit. Revell have a whole range of helicopter kits, all packed with action and intricate detail. They're in model stores now. And you can see them in the 1976 catalogue, just 20p. from your local stockist.

**Revell** the all action range

Revell (GB) Limited, Cranborne Road, Potters Bar, Herts. EN6 3JX.



Continued from page 278

chest, an oval plate on the front centre of the waistbelt, and another oval plate on the lid of the cartridge box; we shaved thin pieces from the end of a piece of sprue filed to shape for these plates. When the crossbelt is in position, cement the Rifleman's shoulder-straps to the figure. The scabbard for the triangular-section socket bayonet was worn on a frog on the left hip; but since this will be covered by the haversack, you will probably find that it is best to cut off about the top third of the scabbard from the Continental infantryman kit and stick the rest direct to the hip below the belt — otherwise the haversack won't lie flat against the hip. Use the Rifleman's haversack, first trimming off the strap-and-buckle fastening, and using the template in the Rifleman kit for the strap dimensions. The canteen — use the Continental soldier's wooden one, or a spare British Napoleonic type from the discard box — was worn slung over the haversack, exactly as in the Rifleman kit instructions.

The Rifleman's pack and blanket can now be added to the back, with straps round the shoulders but *not* the horizontal strap uniting them across the chest. Finally, and probably after painting, add the Continental soldier's musket and sling. The musket butt is a bit long for the lock to fall naturally into the right hand, so file it shorter until it all lines up properly. Don't file straight across the end of the butt — use a rounded file and work a 'dip' into the butt-plate, until it fits around the upper arm and the length is right.

## Painting

**Complexion and hair** Any European colouring you like. **Cap** Dark blue crown, band, and ear-flap, gloss black peak and chinstrap, white metal chinstrap buttons. The dragoons and artillery wore this cap without ear-flaps, and with yellow and red bands respectively; though white bands have been illustrated for the infantry, no contemporary paintings or surviving caps confirm this. **Jacket** Sky blue. This colour probably covers all shades between fairly bright azure to washed-out pale blue-grey. We used Rose's watercolour paints for the model, and 'let down' the Light Blue shade in this range with a little pale grey. White piping around the top, front and bottom of the collar, and around the edges of the shoulder-straps, but *not* across the outside end of the latter. On each side of the collar two horizontal bars of lace equally spaced on the depth of the collar, reaching back from the front vertical piping to a point in line with the shoulder strap buttons, each with a white metal button at the rear end. White metal buttons on cuffs (two), shoulder-straps and front closure. **Trousers** Sky blue. **Boots** Dusty black. **Crossbelt, waistbelt, pack straps** White, brass plates on belts, 'US' cypher on waistbelt plate. **Cartridge box** Black, brass 'US' plate. **Bayonet scabbard** Black, brass chape. **Haversack** Off-white duck, two bone or white metal buttons at flap corners. **Canteen** Light blue, white 'US' or '3' on face, black or brown strap. **Knapsack** Semi-gloss black, white '3' placed centrally high on rear face, white straps. **Blanket** Red or brown-red, white straps. **Musket** All steel furniture, white sling. □

## Squadron codes and colours 1939-56

By Michael J. F. Bowyer and John D. Rawlings

**L 11 Squadron (c)**  
Used on Vampire 5s, eg L:A-VX474, and Venoms, eg L:N-WE286.

**L 16 Squadron (c)**  
Used on Vampire 5s, eg L:W-VV481, and Venoms, eg L:P-WE431.

**L 71 Squadron (c)**  
Used on Vampire 5s, eg L:G-WA163.

**L 96 Squadron (c)**  
Used on Meteor NF 11s, eg L:D-WD696.

**L 98 Squadron (c)**  
Used on Vampire 5s, eg L:D-WE841, and Venoms, eg L:B-WE380.

**L 210 Squadron (c)**  
First displayed on Lancasters, eg L:Z-SW368 during 1951. Also worn by Neptune 1953-56, eg L:X-WX526.

**L 228 Squadron (c)**  
Carried by Shackleton 1/2s, eg L:K-WR951.

**L 240 Squadron (c)**  
Carried on Shackleton 1s from reformation in May 1952. Squadron numbers replaced letters in 1956. Example L:F-WG508.

**MA 161 Squadron (c)**  
Formed February 15 1942 from the King's Flight, No 161 was the second Special Duties squadron to be established, and it operated usually from Tempsford. It was responsible for the Lysander and Hudson pick-up aircraft operated into France. Its main initial equipment was the Whitley V, eg MA:P-Z9224 in use July 1942. Later the squadron was mainly equipped with Stirling IVs. Nevertheless it operated a variety of other aircraft including Albemarle MA:L-P1390, Lysander MA:G-V9707, Havoc MA:R, Hudson MA:O, etc.

**MB 236 Squadron (c)**  
After wearing single number identity in 1943 the unit adopted the letters MB in the summer of that year, these being used on Beaufighter VICs and Xs until the unit was disbanded on May 25 1945. Examples MB:K-RD541, MB:H-NT957.

**MB 220 Squadron (Detachment) ME (c)**  
This Coastal Command squadron held a detachment of Fortress 1s in the Middle East for limited high altitude bombing operations. Some of the aircraft certainly retained WP coding from their 90 Squadron days, but the letters MB were also used by the detachment and retained on one aircraft which later saw service in India.

**MC 20th Fighter Group USAAF (c)**  
Letters worn by the 79th Fighter Squadron from February 1944 to October 1945, first on P-38H/Js and from July 1944 on P-51s.

**MC Station Flight Fiskerton (c)**  
Allocation confirmed, no details of use.

**MD 133 Squadron (c)**  
Formed July 29 1941 at Coltishall. Used Hurricanes to December 1941, eg MD:U-Z3781; Spitfire IIs October 1941-January 1942, eg MD:G-P8191; Mk V, Vbs, eg

MD:G-BL995; and Mk IXs July-September 1942, eg MD:P-BS148. Redesignated No 336 (Pursuit) Squadron, USAAC, September 29 1942.

**MD 4th Fighter Group, USAAC (c)**  
As 336th Pursuit Squadron, flew as part of the 4th Fighter Group September 1942 to April 1943.

**MD 526 Squadron (c)**  
Formed at Longman June 15 1943 as a calibration unit, its main equipment was the Blenheim IV, eg MD:B-T2001. The squadron flew a number of Hornet Moths, eg MD:R-W9388; Oxfords, eg MD:N-X7200, and Dominie MD:X-R5934.

**ME 488 Squadron (c)**  
Reformed Church Fenton June 26 1942 and equipped with Beaufighter IIFs used until August 1943. Received Mk VIFs February 1943 and these were in service until September 1943. Mosquito XIs came into use in August 1943, eg HK204, and these served until May 1944. Mosquito XIs were in service between October 1943 and October 1944, eg ME:R-MM466, and were then replaced by Mk 30s, eg ME:H-MM809. The squadron disbanded on April 26 1945.

**MF Fighters Leaders School/Central Fighter Establishment (c)**

Letters used by FLS within CFE between December 1944 and July 1945 on various aircraft, mainly Typhoons, eg MF:15-JR259 in use December 1944, and Tempest Vs, eg MF:N-SN108.

**MF 280 Squadron (c)**  
This unit carried the identity number '3' in 1943, then the letters MF were introduced about July 1943 and used on the squadron's Warwick ASR 1s, eg MF:H-HG188.

**MG 7 Squadron (c)**  
There is no evidence still that 'MG' was used by 7 Squadron prior to early 1941. In the first week of January 1941 the letters were first applied to the Stirlings at Oakington as on MG:D-N3641. The squadron flew very few Stirling IIs and Lancasters began to replace Stirlings in June 1943, Mk I/IIIs being used, eg MG:M-ND849. Soon after the war Lancaster B1(FEs) came into use, eg MG:E-SW265, and about August 1949 Lincolns came into service, eg MG:D-RE340. Letters were given up in April 1951.

**MH 51 Squadron (c)**  
Letters initially used on Whitley II/IIIs from the start of hostilities, and on Whitley IVs November 1939-May 1940, eg MH:G-K9043. Operated Mk Vs from May 1940 to October 1942, using Whitley Vs in Coastal Command camouflage from May 1942, eg MH:G-Z9144. Halifax IIs used November 1942 to December 1943, eg MH:L-JD311, and Mk IIIs from January 1944 to May 1945, eg MH:C-LW499. Squadron transferred to Transport Command on May 7 1945 and recoded TB. The letters MH reappeared on the squadron's Yorks in January 1950 at Bassingbourn, eg MH:C-MW277, and were used for about a year.

**MI 482 Bomb Group USAAF (c)**  
Letters allocated to 813 Bomb Squadron which flew B-17F/Gs from Alconbury August 1943 to June 1945.

**MJ 1680 (Transport) Flight (c)**  
The original 1680 (Transport) Flight coded BJ became 271 Squadron. The Flight reformed at Prestwick to provide a communications link with the Hebrides, Shetlands and Orkneys using Ansons, Dominies, eg MJ:N-HG723, and Dakotas, eg MJ:O-FZ670.

**MJ Unit not known**  
A Spitfire Vb MJ:L was recorded in 1942, and another, MJ:L-JL122, a Mk IXc, is also known to have existed. It is possible that this was the aircraft of a Wing Commander Flying, such codes being something to watch for.

**MK 500 Squadron (c)**  
At the start of the war 500's Ansons became coded MK, eg MK:S-N9907. Later the squadron used Hudsons, eg MK:W-V9094, and Blenheim IVFs presumably coded MK. Moved to North Africa November 1942 when unit letters were relinquished.

**MK 126 Squadron (c)**  
500 Squadron gave up its letters because 126 Squadron in Malta was already wearing MK on Spitfires, eg MK:P-BR471. Their period of use is not known.

**MK 445 Bomb Group USAAF (c)**  
The vacated UK allocation of MK was now allotted to 702 Bomb Squadron which flew B-24s between December 1943 and May 1945.

**ML 257 Squadron (unconfirmed)**  
In June 1940 two Hurricanes coded ML were observed taking off from Hendon in a formation of DT coded Hurricanes of 257 Squadron. One was ML:H the other ML:K-L2101 which official records list as, at the time, being a 257 Squadron aircraft. ML coding has also been reported on Mustang IV ML:D-KM500 and a Spitfire IX ML:O-NH476.

**ML 12 Operational Training Unit (c)**  
Letters carried on Wellington IIIs, eg ML:R-BK136, and Mk Xs in 1944 at least.

**MM No allocation identified.**  
Reported as used on Lancasters.

**MN 350 Squadron (c)**  
Formed Valley November 13 1941 using Spitfire IIs, eg MN:A-P8727, MN:T-P8200. Used Mk Vbs March 1942 to December 1943 and again March to July 1944, eg MN:S-W3626, MN:F-BM176. Used Spitfire Vcs March to July 1944, eg MN:E-EE613, and Mk IXs December 1943 to March 1944 and July-August 1944, eg MN:P-MH413. Mk XIVs used August 1944 to 1945, eg MN:V-NH686 when the squadron received Mk XVIs, eg MN:A-TD325. Disbanded October 15 1946. Letters MN were then taken up by the Royal Belgian Air Force.

**MN 1665 Conversion Unit (c)**  
Letters used on Stirlings 1943-44, eg MN:Y in use December 1943 when the squadron was at Woolfox Lodge and Tilstock. Period of use uncertain.

**MO No allocation confirmed**  
An 'MO' Spitfire IX has been reported.

Correspondence and photos relating to this series should be addressed to the author, Michael J. F. Bowyer, c/o Airfix Magazine, Bar Hill, Cambridge CB3 8EL.



## Modelling Russian military trucks

Standard Soviet soft-skins and the BA 10 armoured car modelled by Gerald Scarborough

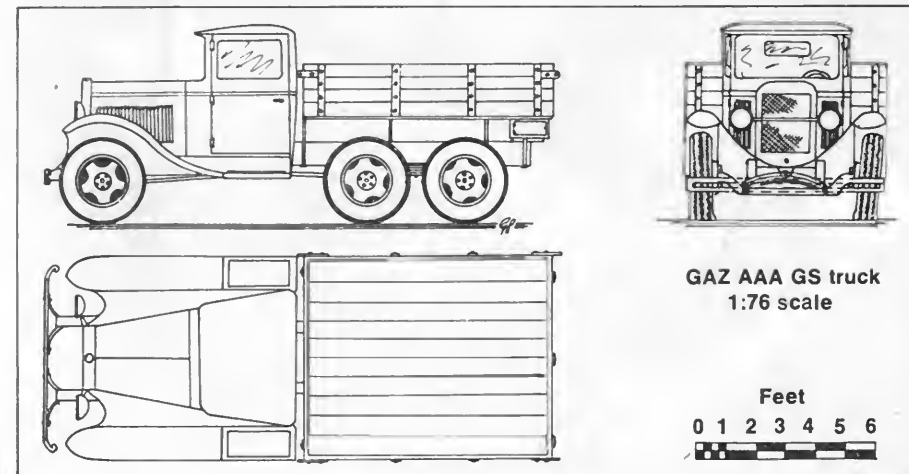
SOME YEARS AGO, in July 1970 to be precise, I was fortunate enough to have my first article published in *Airfix Magazine*. This dealt with the Russian GAZ AAA truck of World War 2 on the chassis of which the BA 10 armoured cars were developed. Information on Russian vehicles has always been scanty and my original drawings of the GAZ trucks were incorrect in some instances — for example the rear springs on the GAZ AA 4 x 2 were cantilever and the front suspension was transverse half elliptic as on the early Ford cars like the model 'T', etc. These GAZ vehicles were based on the American Ford AA of 1930 vintage and in fact were commonly known as 'Russki -Fords'. A new factory was built at Gorki and the 'AA' was in production from 1932 to 1948 and the 'AAA' 6 x 4 from 1933 to 1945. It was from this latter chassis that the armoured cars were built. The BA series armoured cars were similar to their contemporaries built in Germany, America, Japan and Great Britain, having a high silhouette and a modest performance inherited from their commercial chassis. They were, however, a useful stop-gap until replaced by purpose-built armoured cars or

tanks, and I think worthy of a place in any model collection.

To complete the picture my original article of 1970 has been re-written and the drawings re-drawn as necessary so I will first describe construction of the GAZ AAA and AA and then go on, in sequence, with the BA armoured cars. An ambulance type body has also been included to fit the 'AA' chassis as an alternative to the GS truck body.

### GAZ AAA 6 x 4 GS truck

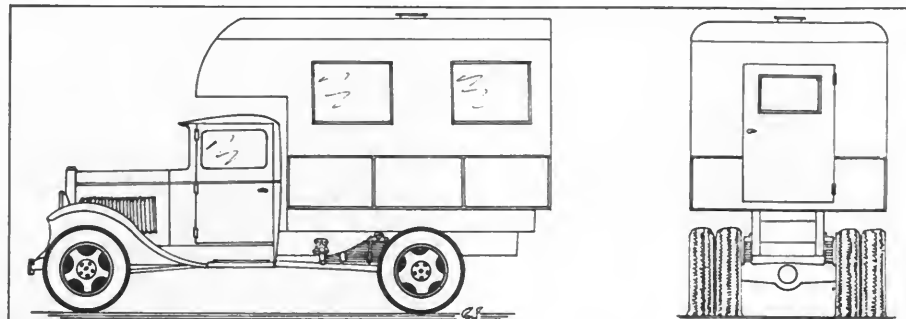
The wheels are common to all the vehicles and as they are of a distinctive pattern, they will be described first. The source is the Airfix Emergency set of the Austin K2 ambulance and K6 fire tender, although others of similar size could be used, for example the Bedford QL refueller, but of course this depends what you have available in your spares box. The first job is to cut them down to the correct diameter and you can either do this with a good substantial file or try turning them down in a hand drill held in a vice. I find that electric drills are usually far too fast for working plastic unless you use wet-and-dry paper with



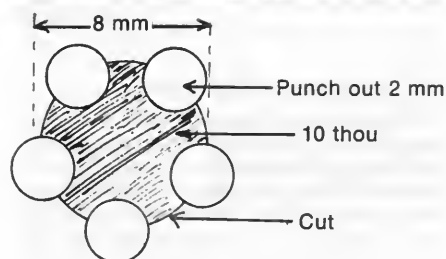
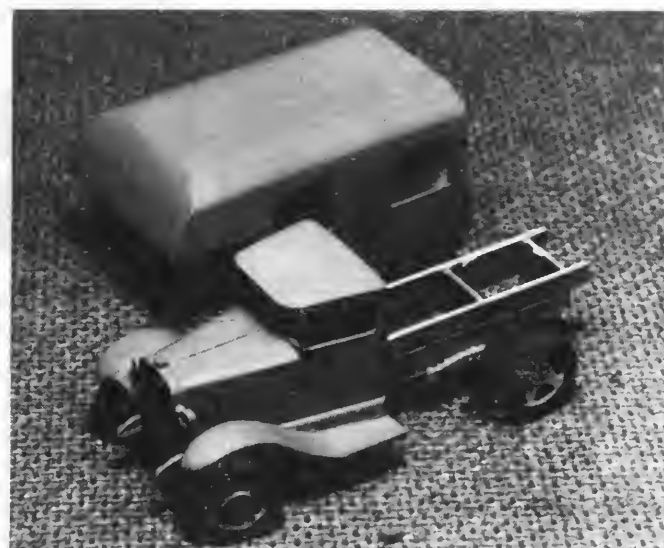
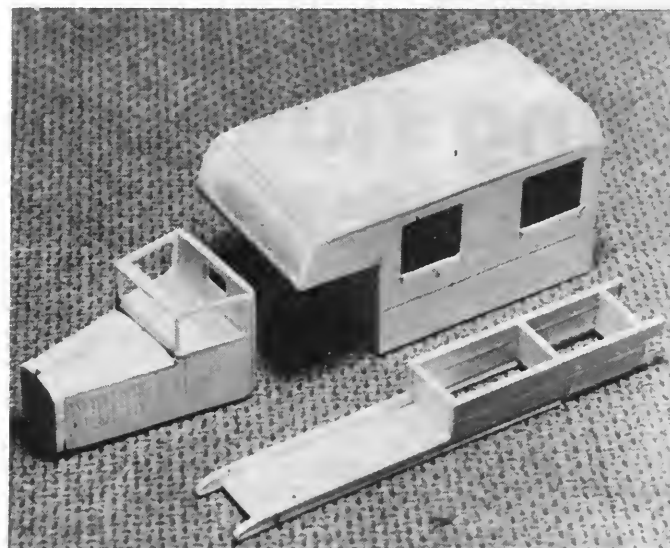


plenty of water to keep the plastic cool. It can be very messy!

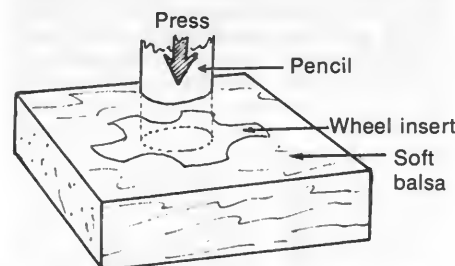
When you have them all neatly reduced in diameter, fit the centre inserts. The sketch will show the basic method which is to mark out 8 mm diameter circles on 10 thou plastic card with five equidistant points marked on the circumference. Punch out 2 mm diameter holes half inside and half outside the drawn circle, finally cutting out the final shape. I save all the punched plastic discs as they come in very useful for things like driving mirrors, hub caps, headlight fronts, etc, on other models. To form the domed centre for the front wheels and the dished centres for the



**GAZ AA Ambulance truck 1:76 scale**  
Note GS truck body of AAA also fitted to AA



Wheel construction is clearly visible in this photo of the BA 10 chassis during construction.

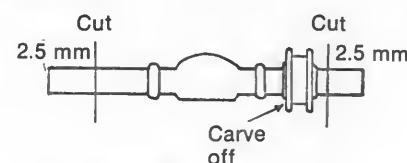


rears, the inserts can be formed by placing them on a piece of soft 4 inch thick balsa wood and firmly pressing the centre with a pencil or dowel end, pushing into the balsa wood.

Basic GAZ AAA chassis and cab assembly with ambulance body on left, with semi-completed model above. Two pairs of wheels remain to be added.

To finish the front wheels first cement a 30 thou thick disc and then one of the inserts, domed face outwards, into the wheel centre. The rear wheels are completed by cementing inserts concave side outside into the wheel centres. The central hubs on all wheels are from punched plastic card discs with wheel nut detail impressed with a compass point.

Axles for all these models can come from the Austins, the front from the K2 and the rears from the K6 or of course anything else similar from your spares box. The spring mountings should be carved away on the K6 rears to allow the twin wheels to slide further on and the projecting ends are cut off to suit. The suspension springs can also be cut from those in the Emergency Set kit.



K6 rear axles

The cab assembly is also common to all the truck variants and construction should start with the 20 thou floor, allowing for the thickness of the cab/bonnet side pieces and rear when marking out of course. The

Continued on page 284

**RIKO**

**RICHARD KOHNSTAM LTD, 13-15a HIGH STREET, HEMEL HEMPSTEAD, HERTS.**



Continued from page 282

sides should then be marked out on 20 thou plastic card and all bonnet louvres, door lines, etc, scored in before cutting out. Cab back, roof and bonnet top are shaped from 40 thou plastic card, again cutting out rear window and scoring in panel lines and louvres, etc, where necessary. You can use the windscreen frame from the Austin K2 flattened and with a centre portion removed to reduce the width.

Assemble the bonnet/cab section, leaving off the roof until after installing the seats and steering wheel and painting the inside. The seat was probably of bench type but I have no information to confirm this. The Austin K6 radiator can be used by cutting a small sliver from the centre and re-cementing the two halves back together again. The bottom should be filed to shape and a hole drilled for the starting handle. Alternatively it is quite easy to scratch-build by scoring 40 thou plastic card to represent the grille and adding a frame from Micro-strip.

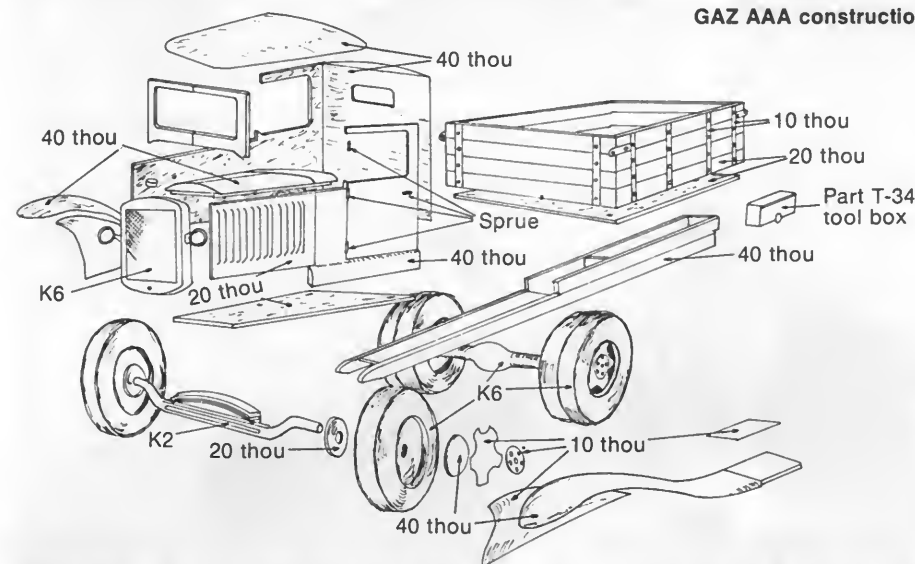
The chassis is from 40 thou plastic card and it pays to include some substantial cross members between sides to keep the assembly square. Attach the various axles and springs according to the particular variant you are making, taken, as suggested, from various Airfix kits. The front axle and transverse spring are located with radius



arms very similar in principle to the Scammell tank transporter. Ensure that chassis and axles are all correctly lined up and that all wheels touch the 'ground'.

The mudguards are a little difficult but are first cut from 40 thou plastic card cut into strips of required width and length. File and sand to 'half round' section and

## GAZ AAA construction



shape the fronts. The correct curvature is obtained by moulding round a heated roller bearing or metal rod of correct diameter. It doesn't need to be red hot, of course, boiling water will do, the trick is to mould the main curve over the top of the wheel and then turn the mudguard over and do the reverse curve down to the running board. Stick the two side by side with a strip of masking tape to ensure you get a matched pair and don't worry if you have to throw a few duds away. Practice on scrap strips is a good idea to judge the point at which to put the reverse curve, or alternatively make them overlong and trim up afterwards. The flat footboard section should be added separately and allowed to dry, after which join offside and nearside mudguards together with a 10 thou plastic card strip underneath the footboards to run across the vehicle underneath the cab. Ensure that the mudguards are parallel and the correct distance apart. This strip is to facilitate assembly to the cab unit.

The cab can now be assembled to the chassis/axle units and the strip under the cab doors (shaped from 40 thou plastic card) can be cemented in place. The mudguard assembly then goes under this, locating with the transverse strip, and the fairings behind the mudguards can be cut from 10 thou plastic card and cemented in place.

The body, either truck or 'van' type for the AA or truck for the AAA, is perhaps the simplest part of the models. The truck type is from 20 thou plastic card with all planking scored in on both inner and outer sides and the floor. Keep it square and add the ironwork from microstrip with coach bolts formed by impressing a dimple with a compass point. The van type can also be constructed in 20 thou plastic card with a roof shaped from laminations of 40 or 60 thou. Most of these vehicles carried a little tool box and these can either be built from scrap or borrowed from an Airfix T34 tank.

There are many other versions of GAZ body style, for example the 6 x 4 ambulance, the MM type, half-tracks, searchlights, rocket launchers, etc — perhaps the editor will give me time and space in a later issue to cover a few more. (Yes please! Ed.)

## BA 10 armoured car

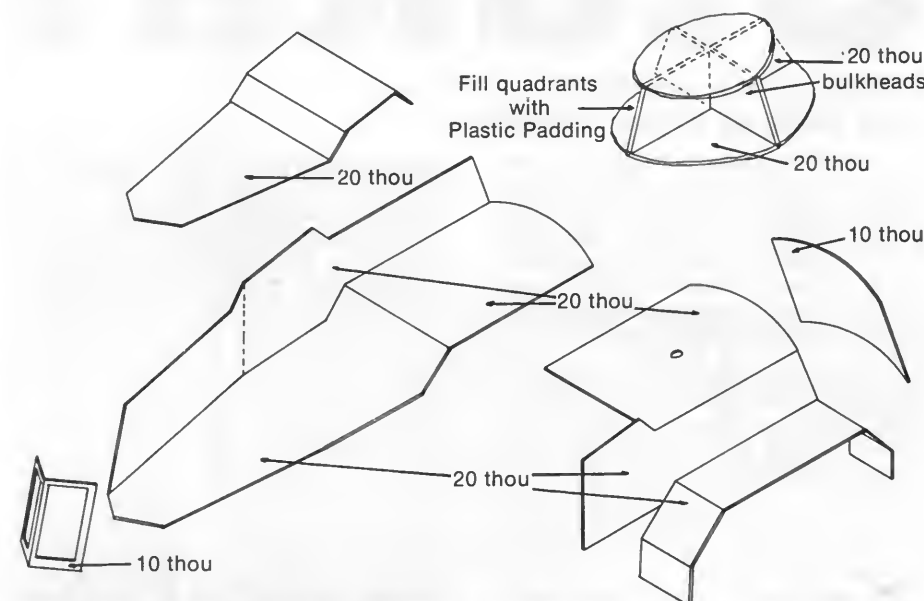
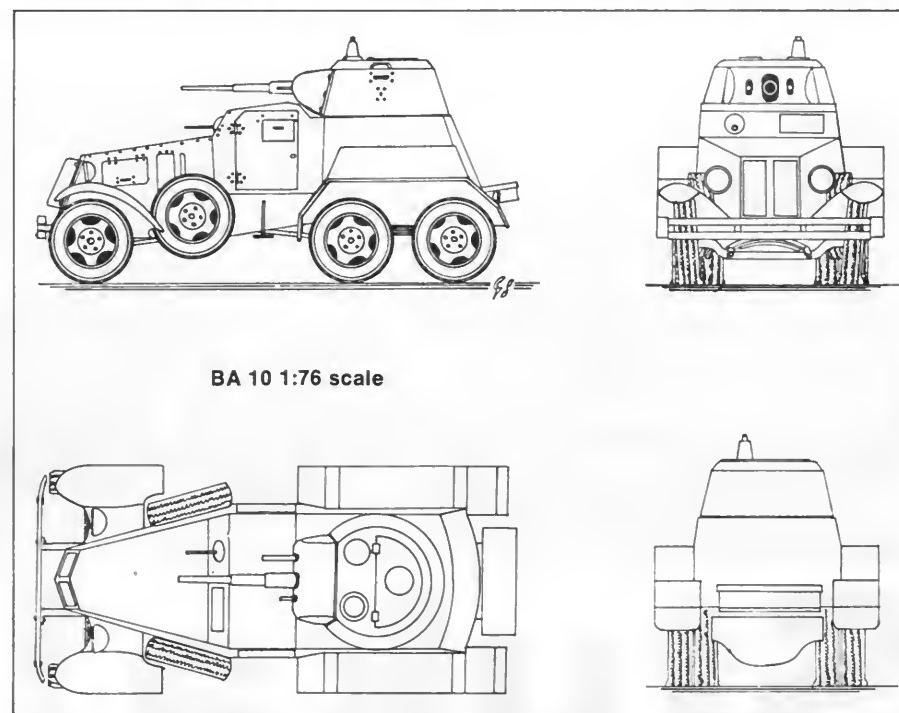
General construction for the armoured car is as for the trucks with wheels and axles being identical. The chassis should, however, be made deeper with the bonnet and cab built up on top. The flat-sided, single shape should not present any problems if assembly is commenced around a floor unit as we did for the trucks. I suggest 20 thou plastic card can be used almost throughout except for the curved rear which is easier in 10 thou. These vehicles were invariably run with radiator front flaps and side flaps open and the simplest way to achieve this is by cutting out the aperture, backing it with 10 thou plastic card which is eventually painted matt black. The flaps are cemented in place in the open position.

The conical turret can be built up either from laminations of plastic card or by building up as shown in the sketch. In this method a top and bottom are cut to correct size and spaced apart with internal bulkheads. All parts should be heavily scored on the insides. When dry the gaps between top and bottom are filled with Plastic Padding which is filed and sanded to shape. The mantlet is from scrap or can be made from Plastic Padding between the two side plates.

The rear mudguards with their stowage boxes, for the 'track chains' which can be fitted around the rear wheels, are built up from mostly 10 thou plastic card. A rear stowage rack for camouflage nets, ropes, etc, can be detailed by reference to various photographs.

Colours of Russian vehicles are never easy to ascertain but generally seem to be one colour with no camouflage patterns evident. Greyish green or olive drab is safe for the trucks or generally as for contemporary tanks. A disreputable and well used appearance is evident on all photographs with much 'mud' for the weathering fans. Winter of course saw the application of an overall white so depending on time of year I leave the choice very much to you. □

**Facing page** Two views of completed BA 10 armoured car model. Below The BA 10 in the foreground with the GAZ AAA ambulance on left and standard AAA on right. In the background is one of the author's earlier models depicting an AA with opened bonnet and engine detail.







Ju 87B captured at Timmini on January 12 1942 (via Richard L. Ward).

# Stuka!

Modelling the Ju 87B from Airfix and Frog parts, by **Bryan Philpott**

THE RAPID development of warplanes between 1938 and 1945 rendered the Ju 87 obsolete long before the end of World War 2. Nevertheless, this ungainly aeroplane has had weaved around it a reputation, spiced with legend as well as fact, that put it in the class of one of the most controversial aircraft to have been used by either side.

Virtually obsolescent — by the standards of the day — when the war began, the Stuka (which is an appellation that is technically incorrect when applied to an individual aircraft, since it is an abbreviation of the German word *Sturzkampfflugzeug* which applies to all types of dive-bomber) was an ungainly, slow, and virtually defenceless aeroplane when faced by fighter opposition. Those in the Luftwaffe who considered the Ju 87 to be the 'master' weapon appeared to be vindicated in the Polish and French campaigns, when this evil looking aeroplane struck terror into the

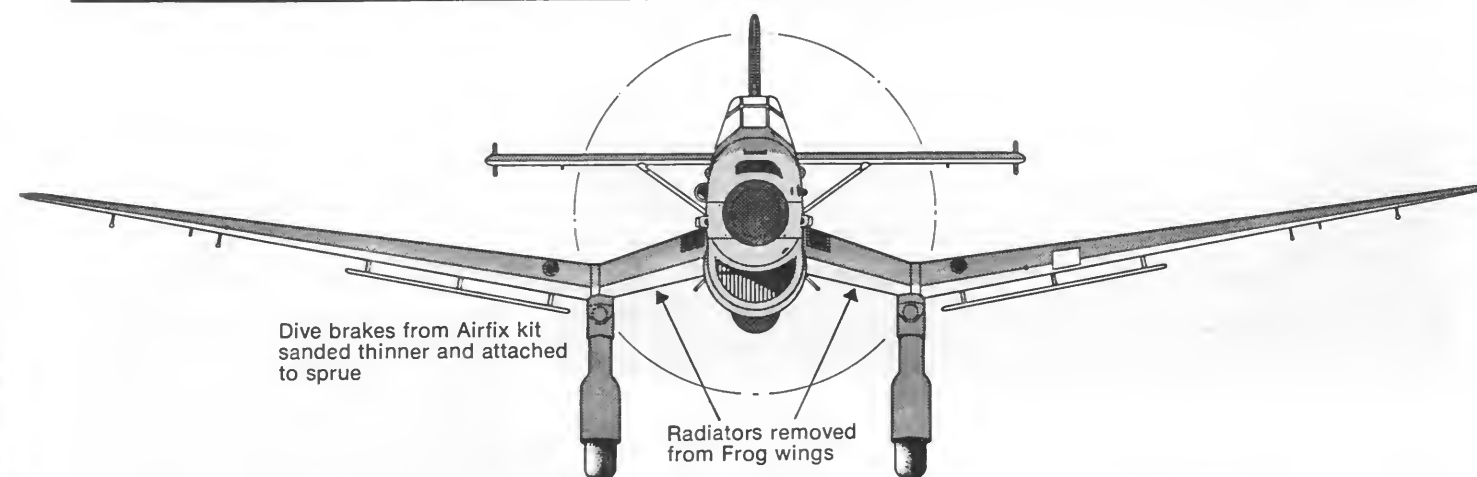
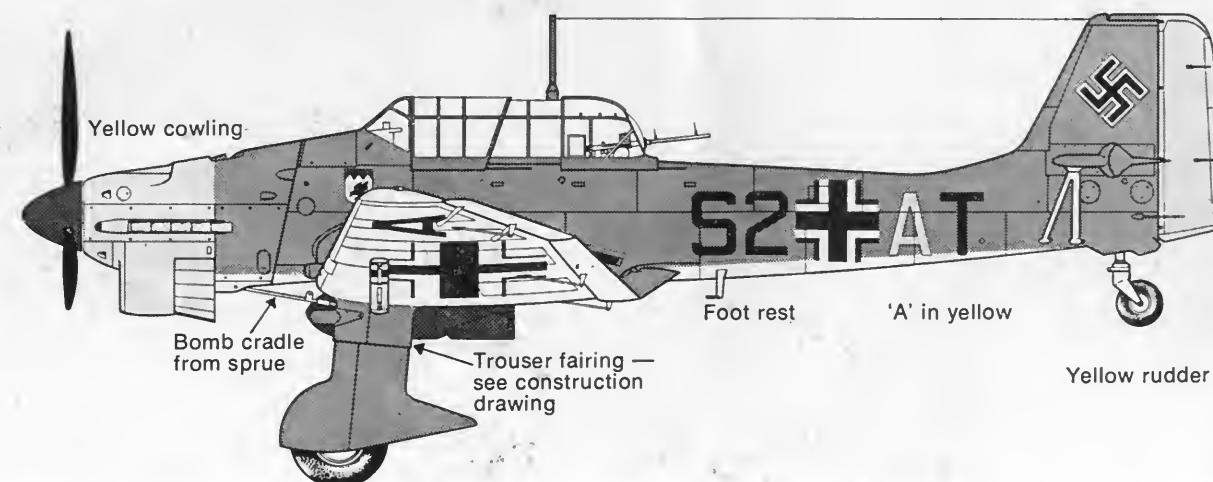
hearts of those on the receiving end of its screaming dives that culminated in the deadly accuracy of its bomb load.

Dive bombing was a skilful art and in the hands of a well-trained pilot the Ju 87, which offered its crew good visibility, a high standard of manoeuvrability, and responsive controls, could deposit its lethal load within a 30 yard error of its selected target. With virtually no fighter opposition in the campaigns mentioned it is not surprising that its reputation reached a zenith that tended to blind those who couldn't, or didn't want to see its shortcomings. As a weapon for use by an Air Force that controlled the air space in which it operated, the Ju 87 was undoubtedly an effective piece of equipment. But when it met fighters of the Royal Air Force in the summer of 1940, its use took on a true perspective, for it became an easy prey and was decimated in such numbers that its withdrawal very quickly followed. Without

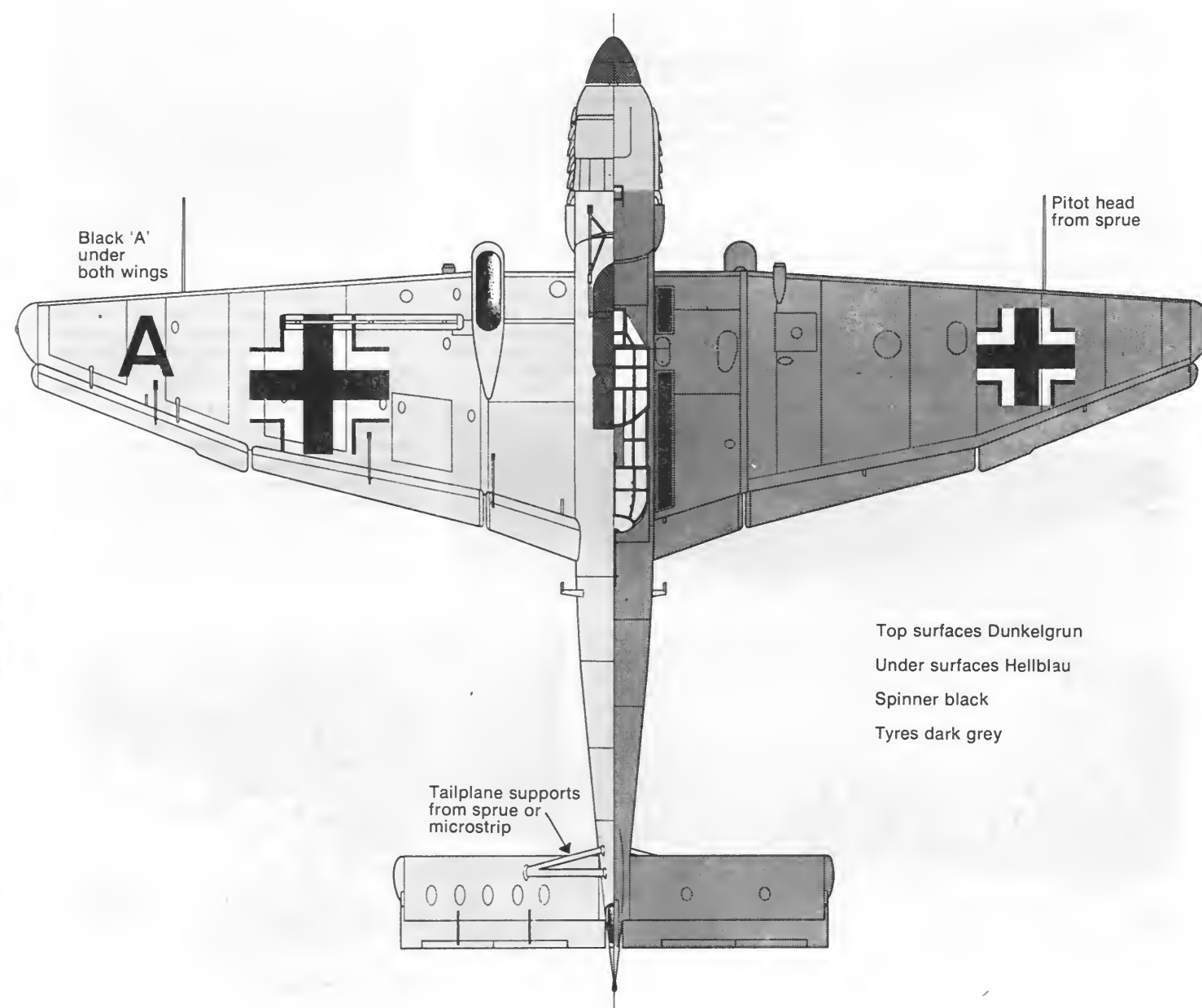
fighter escort, or once such a screen had been penetrated, the Ju 87 became probably the most vulnerable combat aircraft ever to be thrown into a major conflict and its crews had very little chance of survival. Although the Battle of Britain was the beginning of the end for the Ju 87 it continued to be developed for use in various roles and still served with the Luftwaffe when the war came to an end.

Design work on the 'Stuka' began in 1933 and within three months of the initial specification having been finalised the first prototype, known as the Ju 87 V1, had been rolled out and commenced its test programme. This aircraft had the inverted gull wings that were to become such a well-known characteristic of the Ju 87, as well as the long canopy that housed the two man back-to-back crew. It was powered by a Rolls-Royce Kestrel V engine driving a fixed-pitch two-bladed wooden propeller, but differed from what was to become the final design in many respects including twin fins and rudders.

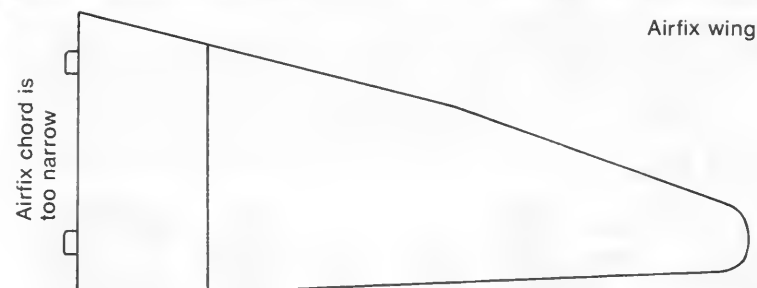
Shortly after diving trials began in 1935 a structural failure resulted in the loss of the V1 and the investigation into this slightly delayed commencement of trials with the second prototype, the Ju 87 V2. This delay resulted in the change from two vertical tail



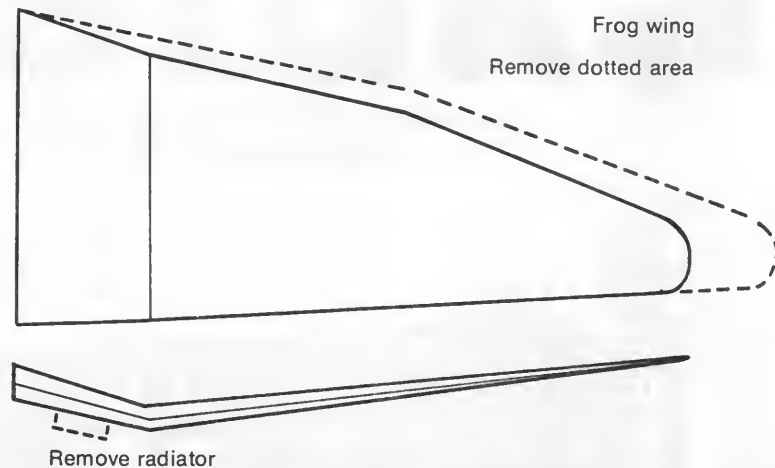
Ju 87B Stuka  
1:72 scale  
Drawings by Martin Holbrook







Frog wing  
Remove dotted area



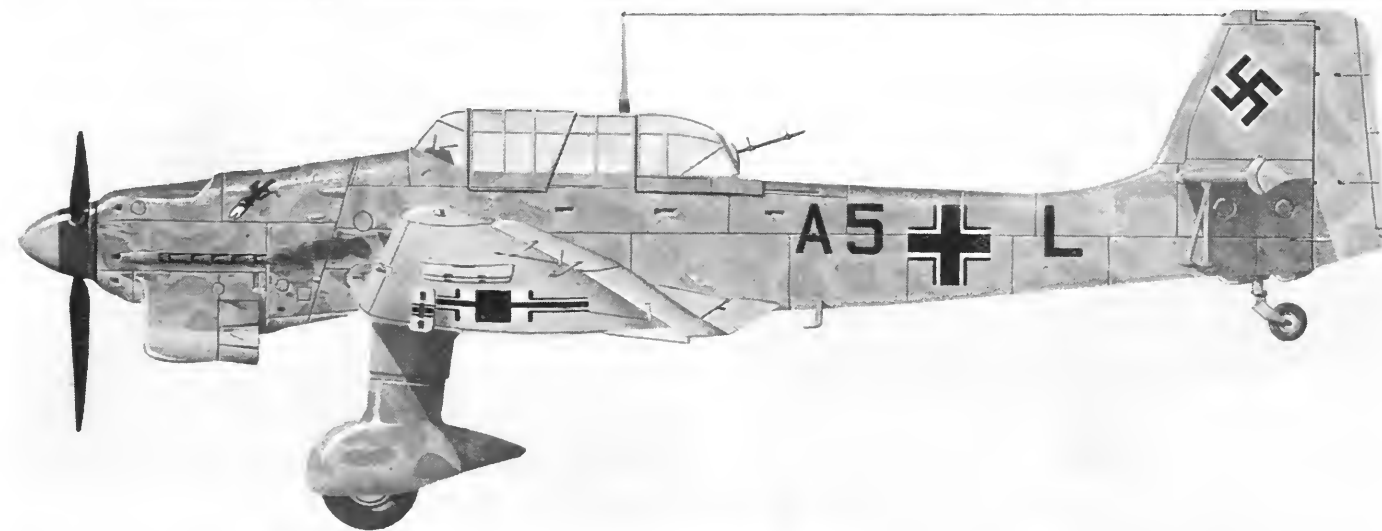
Top of page Rudel's Ju 87B 'T6+AL' (via Richard L. Ward). Left Photo showing the difference between the Airfix wing (left) and the modified Frog one. Below The only surviving Ju 87B, which has been renovated by the Experimental Aircraft Association of Wisconsin, seen after its capture by the British (via Bruce Robertson).

surfaces to the more familiar single fin and rudder, and trials recommenced in the autumn of 1935. Both the V2 and the V3 were powered with a Jumo 210A engine and the original two-bladed airscrew gave way to a variable pitch three-bladed unit.

Although there was competition from three other aircraft, Junkers were sufficiently confident of obtaining the final contract that by early 1936 they had already started tooling for an initial production batch. One opponent of the dive bomber concept was Oberst Wolfram von Richthofen, who, as chief of the Development Section of the RLM's Technische Amt, issued a confidential directive in which he called for the complete abandonment of the programme. But one of the strongest advocates of the Ju 87 was Ernst Udet, who immediately overruled von Richthofen when he took over the Technische Amt, thus ensuring the future of the Ju 87.

Development work continued and by late 1937 a Kette of three aircraft from 1/StG 162 — which by this time had been redesignated StG 163, was despatched to Spain for use by the Legion Condor to evaluate the aircraft under combat conditions. These aircraft were early Ju 87A-1s which, by the time of their debut, had been replaced on the production lines by the Ju 87A-2, which was powered by a Jumo 210Da engine with a two-speed supercharger. When the more powerful Jumo 211 engine became available a major redesign was initiated and by 1939, when over 200 A series had been delivered and were being phased out of front-line service, the B series was being introduced.

The Ju 87B-0 was an extensively modified V-7 and in 1938 a further version of the Jumo engine, in which fuel injection replaced carburetors, became available and was fitted to production aircraft which became designated B-1. On this version only the wings and horizontal tail surfaces remained as the A series, the whole fuselage undergoing a complete 'clean-up' in



which sliding canopies replaced the original hatches, and the 'trousered' undercarriage legs gave way to streamlined spats. Five B-2s were sent to Spain in late 1938 where they followed in the footsteps of the original three As.

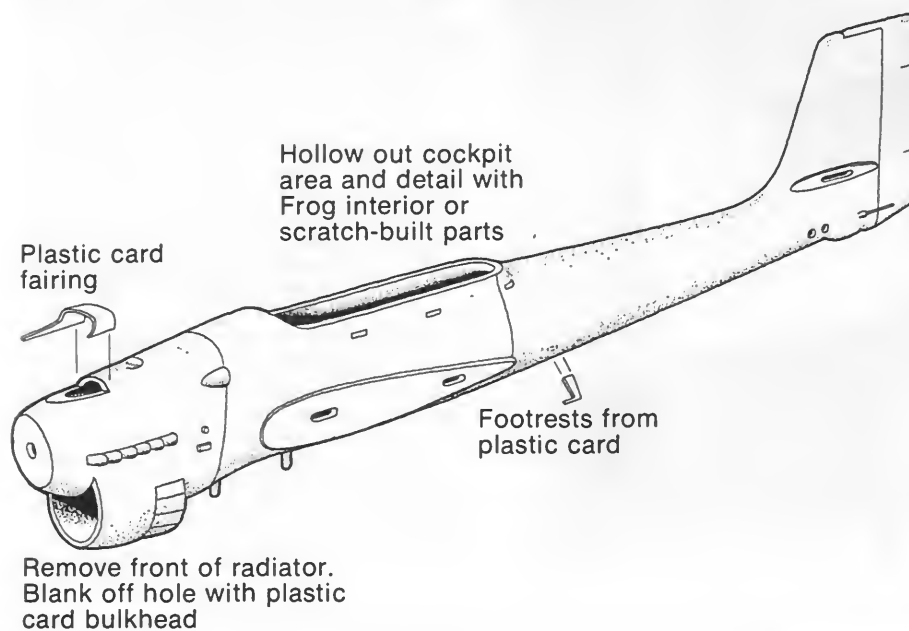
On September 1 1939 all nine of the Luftwaffe's Stuka Gruppen had been equipped with the B-1 which represented a total of 336 aircraft. Late in the same year the B-2, which was fitted with ejector exhausts, a broader airscrew and hydraulically operated radiator gills, was in production and these began to supplement and replace the earlier B-1. The initial success of the Ju 87 saw tentative plans to cease its production revoked, and even the lessons learned in the Battle of Britain failed to bring to a halt this anachronism of an aeroplane.

The basic design continued to be changed as the Ju 87 soldiered on in the bombing and ground support roles. It enjoyed considerable success as an anti-tank weapon on the Eastern Front and saw service in most theatres. Its roles were extended to include night intruder missions, glider towing, ground attack, and in one experiment, troop carrying. A version of it was also planned for the aircraft carrier *Graf Zeppelin*, when it was fitted

with the necessary arrestor gear and manually folding wings.

Although many manufacturers of plastic kits have included versions of the early marks of Spitfire, Hurricane and Bf 109s in their lists, the first versions of the 'Stuka' that were contemporaries of those aircraft mentioned, have surprisingly been neglected in favour of the later 'G' models. The forthcoming introduction by Airfix of the Ju 87B in their 1:24 scale range has prompted a look at their earlier offering of an early war period Ju 87B, as it is felt that there will probably be many collectors of 1:72 scale models whose dormant interest in this aircraft will now be re-awakened.

Before taking too critical a view of the 1:72 scale kit it is worth remembering that it is one of the very earliest offerings to come from Airfix and therefore comparison with some of the present range would be invidious. However, careful work enables a much improved model to be added to any small scale collection, and is the only way — until such time as Airfix choose to retool it, or another manufacturer fills the gap — this can be done. The French company Heller also produce a Ju 87B but this too is not as accurate as it might have been, and has not been seen in the shops for some time, at the time of writing.



Ju 87B of 3/SG1 in desert camouflage of overall sand with blotches of dark green and light blue under surfaces, as featured in Bryan Philpott's recent book *Airfix Magazine Guide 10 Luftwaffe Camouflage of World War 2*.

The work involved in this conversion, for that is what it virtually is, is considerable and involves the purchasing of not only the Airfix kit but also the Frog Ju 87G. It could be argued that it is hardly worth bothering as there are so many areas that need attention that one might just as well start from scratch. This is all very well for those modellers skilled enough to tackle such a task, but one must not overlook the not inconsiderable numbers who cannot or do not want to go to such lengths, and will be quite happy to work on the existing kit.

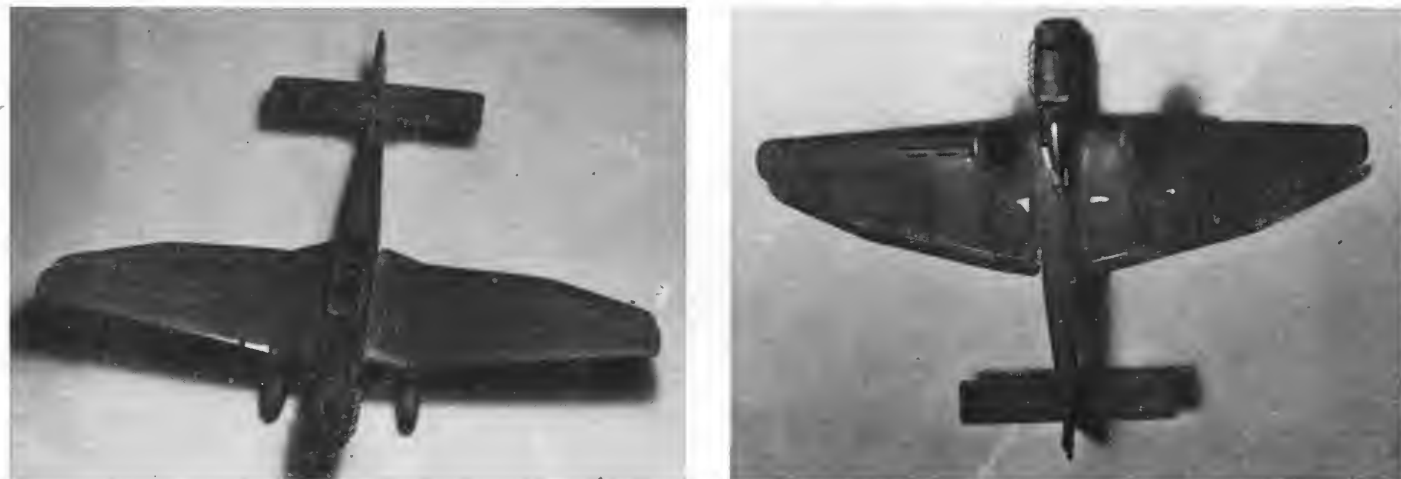
The work I have detailed covers the major changes to the basic kit, there are others that the avid enthusiast might want to carry out, but basically I have tried to sow the seeds from which a fair or very good 1:72 scale Ju 87 can grow, depending on the whims of the individual concerned.

The fuselage requires major surgery so this is as good a place as any to make a start.

Before cementing the two halves together remove the solid piece between the front and rear cockpits as well as the locating pins for the crew members. Whilst still in a removing frame of mind, hollow out the front of the large chin intake and cut a blanking piece from 20 thou plastic card which is recessed into this intake. I found that the cockpit floor and seats from the Frog kit fitted into the Airfix halves, and inserted these together with an instrument panel.

The sill around the cockpit edge was thinned and both halves cemented together with the cockpit interior in place. The assembly was left overnight to set really solid then attention was turned to putting right the contours of the fuselage forward of the windscreen. The most noticeable error on the kit is the almost total absence of the oil cooler intake, this being represented simply by nothing more than a slight dimple. I made a vertical cut with a razor saw at the rear edge of the intake, then a horizontal one from just aft of the nose to meet this. When the plastic was removed a sizeable hole resulted but this was filled with a strip of plastic card





Top and bottom views of the author's model during construction, showing revised wing shape, underwing radiators removed and blanked off, detailed cockpit, etc.

which formed the basis of the revised nose. Additional thinner pieces of plastic card were then cemented around the rear and sides of the hole and, when set, were faired in with body putty. When this area had thoroughly dried the new intake was shaped using a very sharp modelling knife and lots of attention from wet and dry. It is an exacting task to get the correct shape but constant reference to the drawings show the final shape that must be aimed for.

The intake behind the oil-cooler is made in the same way except that I found it necessary to drill a small hole that was then elongated with a file before being moulded to the correct shape with body putty.

The exhaust stacks were made more positive in shape with a modelling knife and their ends drilled out with a very fine dental burr.

Similar attention was given to the gills behind the chin intake, by using the moulded marks as a guide for cutting definite separations between them. It would not be too difficult a task to remove these gills completely and replace them with new ones from 10 thou plastic card, if you have the time and expertise to make every one

the same shape, and fix them in a realistic position.

The shape of the fin/rudder can be improved by dexterous use of wet and dry and the modelling knife, as can other areas on the fuselage, such as the three small intakes around the nose cowling.

Should you not relish the task of building-up the intakes on the top decking an alternative method is to remove a whole section above the exhaust stacks, cement a balsa block in place and work this to the required shape. Of the two I personally prefer the plastic card/body putty approach as I find this easier to work with than balsa.

The wings from the Airfix kit are too narrow in chord and must be completely replaced. I used those from the Frog kit which are the correct chord but being from a 'G' version have a greatly increased span. Start by removing the radiators from the inboard sections before the halves are joined together and fill the holes left by this work with a plastic card base before cementing the bottom sections to the top ones. When this has been done the two plastic card lined holes are filled with body putty which is then sanded smooth.

As already stated the Airfix wings are too

narrow in chord by about 4 mm but they can be used to mark the correct span on the Frog wings which are then cut-off at the tips. These are then reshaped in this area to achieve the more blunted tips of the Ju 87B, which also means that they will need to be sanded to a thinner section at this point. New locating slots have to be cut into the Airfix fuselage and when the Frog wings are fitted, the gap caused by the increased chord at the trailing edge/fuselage join has to be filled with two strips of plastic card faired in with filler.

The trailing edge flaps/aileron from the Frog kit are also reduced in span and fitted in their original locating holes in the wing undersurfaces. Dive brakes are made from plastic card using those in the Airfix kit as a guide, and they are cemented in place using stretched sprue to locate them in the correct positions, which can be ascertained from the Airfix wings. I used these to mark the three locating pins then drilled holes to accept the sprue before finally cementing the plastic card dive brakes to the protruding ends of the sprue.

Whilst the drill is handy use it to make a hole for the pitot head 30 mm from the tip of the starboard wing tip, the actual pitot head being fabricated from stretched sprue.

The wheels from the Frog kit were also used but the spats were reshaped with wet and dry and the legs covered with a 'trouser' made from 10 thou plastic card.

The small end plates on the tailplanes in the Airfix kit must also be reshaped and the underneath braces replaced by finer ones made from plastic rod or sprue. It is of course possible to use the Frog tailplanes, which is what I in fact did after becoming dissatisfied with my efforts at reworking the Airfix ones. The tail wheel from the Frog kit is also much better than that included with the Airfix one.

The locating pins for the bomb under the Airfix fuselage were left in place but a new bomb was located in the spares box and the cradle used to swing it clear of the propeller was added from plastic rod.

As far as the propeller itself is concerned, I used the Frog spinner with blades made from plastic card, although the Airfix one, if cleaned-up, will suffice.

To bring the actual construction to



Continued on page 292

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Continued from page 290



Fit 10 thou plastic card trouser to Frog leg

almost 100 per cent completion add the two entry foot rests beneath the fuselage behind the canopy using stretched sprue to make these two 'L'-shaped components.

The most difficult task has been left to last but can be tackled at almost any time after the fuselage has been completed; this is the cockpit canopy.

There are several ways in which this can be tackled, the real defeatist method would be to use the one supplied with the kit, but this would be a true case of 'spoiling the ship for a ha'p'orth of tar'. It is as well to make it quite clear at this stage that the Frog canopy *cannot* be used as it is totally incorrect in shape for a 'B' version.

Using the plans and the Airfix canopy as a guide to get the correct width and length, a balsa canopy can be made from which a new clear canopy is moulded; but after much fiddling about I chose an entirely different approach.

My method was to remove the windscreen and rear 'gunner's' section from the Frog canopy and cement these two components in place at the front and rear extremities of the cockpit opening. I then built-up the rear section using acetate sheet heated and moulded over the Airfix canopy for the part from the gun-mounting to the back of the pilot's seat, cutting this out and cementing it in place with a quick drying epoxy glue. The pilot's sliding canopy was then cut out of the Frog canopy and very gently sanded along its top edge to remove the curvature before cementing it in the open position. This work must be done with extreme care as the Frog canopy is already very thin and the slightest pressure during work will result in it breaking. Once I had achieved the shape I wanted I polished the sliding portion with powdered toothpaste to remove all signs of sanding then painted the framing before cementing it in place.

So there it is; there are other refinements and improvements that can be done, and it has not been my intention to describe how to make this early kit into a 100 per cent accurate Ju 87. But if the work I have described is carried out the result will certainly be more like a Ju 87 than the original made straight from the box is. Those who seek perfection will find other tasks to do, or simply sit back and wait in hope for a 1:72 scale kit.

The model was finished as the aircraft of the Staffelfkapitan of 9/StG 77, all markings coming from the Blick Dry-Print range which is now being marketed by Morris & Ingram (London) Ltd. The unit badge came from Microscale sheet No 72-9 on which the badges of Gr Stab 11/StG 77 and the 9th Staffel have been transposed, so if you are making this aircraft and using that sheet make sure you use the diving crow emblem on a yellow background with a blue top as shown on the coloured illustration on the cover of this magazine. □

# Northern Militaire —what a show!

Bruce Quarrie reports from the recent highly successful 'happening' in Manchester

NORTHERN MILITAIRE was the title of a two-day military modelling and wargaming 'happening' in Manchester at the beginning of November which probably ranks as the best such event ever. Over Saturday November 8 and Sunday November 9 some 4,000 enthusiastic modellers, wargamers and members of the general public crowded into Swinton's Lancastrian Hall, one of the best attendances ever recorded at such a show.

There were the usual plethora of trade stands — one of the principal attractions of exhibitions like this being that you can actually get to see some of the figures advertised by manufacturers — most of which did such good business that by the afternoon of the first day those manning the stands were sending back to 'head office' for new stocks!

The new Hinchliffe 25, 54 and 75 mm Peninsular War ranges were much in evidence since one of the exhibition's main attractions was a figure painting competition organised jointly by Hinchliffe Models, Osprey Publishing and Campaign Colours to celebrate publication of the 50th title in Osprey's 'Men-at-Arms' series — Otto von

Pivka's *Spanish Armies of the Napoleonic Wars*. (We are delighted to hear, incidentally, that this title is not — as was rumoured — to be the last in this popular series: next March will see publication of *The Mexican-American War*, by Philip Katcher and Gerry Embleton; *The Zulu Wars*, by Angus McBride; *The Landsknechts*, by Douglas Miller and Gerry Embleton; and *Napoleon's Dragoons and Lancers*, by Emir Bukhari and Angus McBride; while May will see publication of *Rommel's Army*, by Martin Windrow and Michael Roffe; *Scandinavian Armies of the Napoleonic Wars*, by Jack Cassin Scott and Michael Roffe; *The Sudan Campaign*, by Robert Wilkinson Latham and Michael Roffe; and *Napoleon's German Allies II*, by Otto von Pivka and Gerry Embleton.)

Outstanding among the entries in this competition were a 75 mm Spanish 7th Cavalryman from Hinchliffe's new Julian Benassi range, and a mini-diorama composed from the two figures in the 54 mm Sanderson range, impeccably executed and painted by George Johnson.

Apart from this painting competition, there were displays and competitions from

**Left** Superb French cuirassier from Graham Bickerton of Merseyside which won second prize in the competition for single foot figures. **Right** Immaculate Highlander from Jack Day of Preston which took first prize in the same competition (all photos by John Son).



**Right** The superbly painted 75 mm scale figure of a Spanish 7th Cavalryman from George Johnson with its really villainous, unshaven face, which captured first prize in the Osprey painting competition. The only fault with this figure, which many people commented on, is the length of the horse's back — come on Hinchliffe, since the figure's so nice, how about recasting the horse? **Above** George Johnson's other prizewinning entry utilising two Sanderson 54 mm Spanish infantrymen. **Foot of page** Another winning entry from Jack Day of Preston was this diorama in 54 mm scale depicting the Retreat to Corunna, which came first in the diorama group (photos by John Son).



a variety of clubs and organisations: the one which probably attracted the most interest was the north versus south 'battle of the champions' ancient wargaming competition, which was won by Hinchliffe designer Pete Gilder — a triumph for the north.

Demonstration wargames were put on by various northern clubs, and ranged from gladiatorial combat in the now famous arena constructed by members of Halifax War Games Society through a Western gunfight and Napoleonic conflict (using, I was happy to note, Airfix Magazine Guide

No 4 for the rules!) to — would you believe — dinosaur wargaming! Fantasy wargaming seems to be gaining strength rapidly, and Leicester Micromodels' 'Wizards' rules were a sell-out.

Other stands included displays put on by the British Model Soldier Society and Miniature Armoured Fighting Vehicle Association, while sweating 'French' Imperial Guard Grenadiers from the Sabre Society stood guard around the halls. The latter also put on a most impressive stand to arms during the minute's silence on Remembrance Sunday. Also much in evi-

dence were 'Feds 'n Rebs' from the ACW Society, colourfully attired members of the Sealed Knot, and a clutch of whisky-drinking, gun-toting 'Western gunfighters' who played grown-up 'cowboys and indians' outside the hall to the delight of the many youngsters present.

All in all a most impressive event which everybody appeared to enjoy: if you can possibly make next year's — which promises to be even bigger and better — then I strongly recommend you to go. Congratulations and thanks to all the organisers for giving us such an enjoyable weekend. □





Michael J. F. Bowyer

## Army-air colours 1937-45

### Part 4 — Command and the Tomahawk

BY THE END of 1940 employment of the army co-operation squadrons diverged so much from the remainder of Fighter Command that it was decided to disband No 22 Group and on the same day — December 1 1940 — form Army Co-operation Command under Air Marshal Arthur S. Barratt, KCB, CMG, MC. Non-operational units hitherto administered by No 22 Group were now placed under No 70 Group whilst operational squadrons came under No 71 Group. Thus the Command initially administered the following units: 70 Group — stations at Andover, Weston Zoyland, Old Sarum, Farnborough, Christchurch, Cardiff, Castle Bromwich and Ringway, at which were sited No 112 Squadron RCAF, Nos 1, 6, 7 and 8 Anti-Aircraft Co-operation Units, No 110 Wing, the Pilotless Aircraft Unit, Special Duty Flight, 'D' Flight, the Central Landing Establishment and Nos 1 and 2 Schools of Army Co-operation. Under 71 Group came the operational Lysander squadrons, Nos 2, 4, 13, 16, 225, 239, 241, 268, 309, 613, 614 and No 110 RCAF Squadron. No 231 came under control of HQ Northern Ireland.

The new Command had arisen from a suggestion by the Secretary of State for Air in September 1940 that an army co-operation command comparable in status with Coastal Command should form, but this was not found feasible. It was considered that the Command should be constituted by combining under one HQ the personnel and staff of GHQ Home Forces with a C-in-C responsible to C-in-C Home Forces and under his operational control. An alternative was a Command independent of Home Forces comprising two Groups, coming under GHQ Home Forces for operations. The second course was decided upon so that RAF and Army needs were both taken into consideration.

Army Co-operation Command came into being as Lysander squadrons were re-equipping with the superior Lysander III. Nos 16 and 614 Squadrons were declared thus equipped on November 8 1940, and the order of re-equipment of the remainder was Nos 4, 13, 16, 26, 110 RCAF and 225. Others already had the Mk III. To the end of their operational lives the Lysanders retained their Dark Green-Dark Earth-Sky finish with Medium Sea Grey unit letters.

Barratt's immediate concern lay with the future equipment of his operational squadrons. Although it was acknowledged that the Lysander still had a useful life ahead, its ability to survive in a fighter zone was questionable. Attention was therefore immediately directed to replacement or supplementary types. In October 1940 trials of the Boulton Paul Defiant began to assess its suitability for special reconnaissance of troop and vehicle movements in areas where the Lysander would be too vulnerable. It was found that at a suitable reconnaissance height the Defiant had lit-

tle speed margin over the Lysander although to and from the target area it would be able to fly at over 300 mph. On balance the Defiant did not provide an answer to a Lysander replacement; some other type was needed.

Barratt adamantly expressed the point that he dare not risk being in a position whereby his squadrons were equipping in the spring of 1941 when the German invasion postponed from autumn 1940 was most likely to take place. Thus any re-equipment of the squadrons — which he considered essential — must be straightforward and rapid. On December 22 1940 he reminded the Air Staff that the Hurricane had been used for some reconnaissance purposes by the Air Component in France, also recently in the Western Desert war. His ideas now revolved around the theory that squadrons in south-east England where operational needs would be greatest should re-equip with Hurricanes or, failing that, Blenheim IVs. Hurricanes would be placed in the south-east and north-east of this zone, squadron Nos 239,

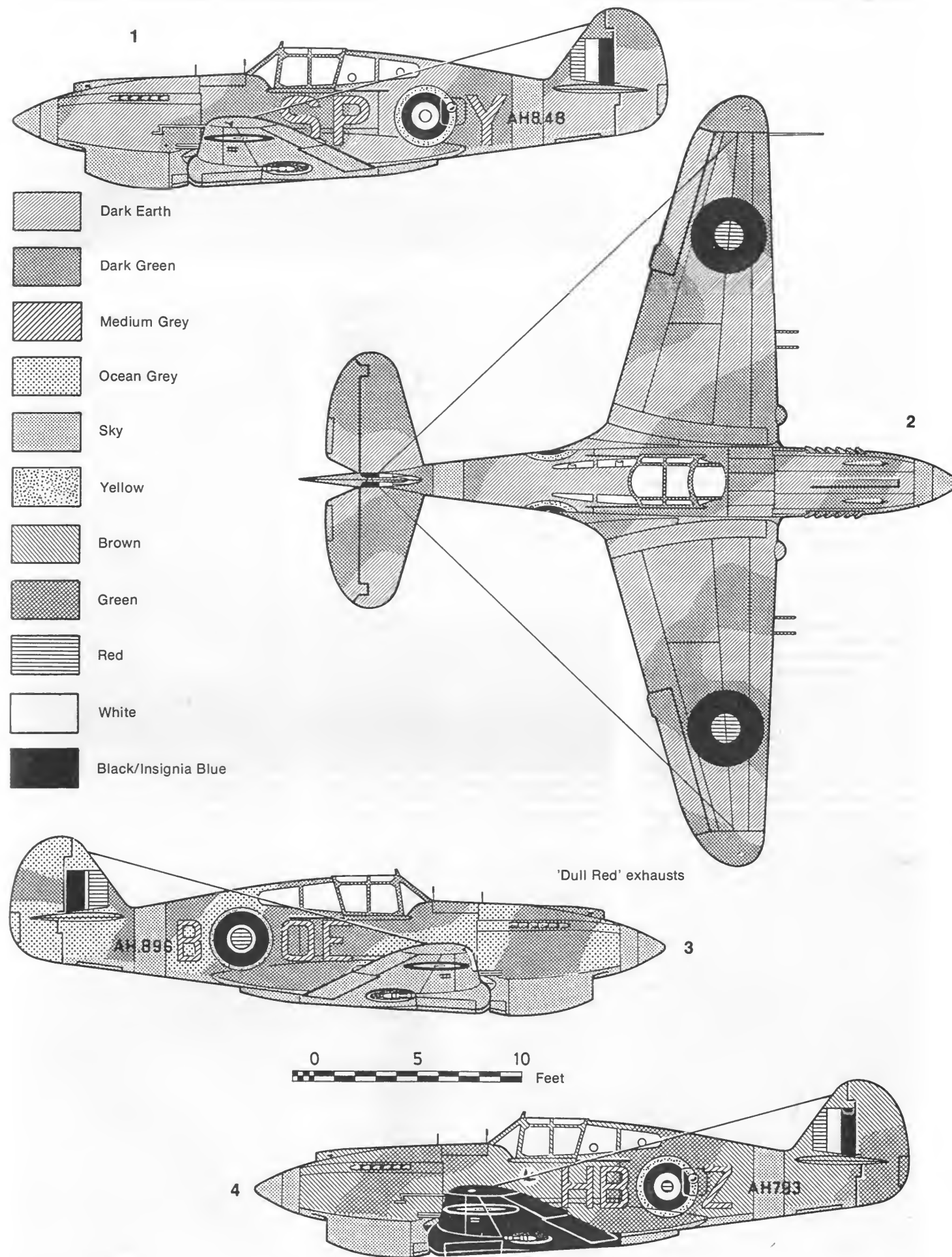


**Above** Tomahawk AX900, one of the first to reach Britain, seen at Yeovil in early 1941. Note the extent of the Sky under surfaces, also the radio mast. Wing guns are carried, but no camera is yet installed (via Bruce Robertson). **Below** Tomahawk 1 HA863 photographed in the hands of AFDU Duxford in early March 1941. Markings are standard, with the port wing having a matt black underside. There is no yellow surround to the Type A roundel. No camera port is fitted, the white rectangle aft of the roundel being a first aid notice. The notice under the rear hole in the cockpit coaming is accompanied by a notice concerning oil type. On April 29 AH863 joined 26 Squadron, serving until June 29. 400 Squadron used the machine between July 12 1941 and July 8 1942 when it joined 171 Squadron for a brief stay (via Bruce Robertson).



#### Key to drawings opposite

1 SP:Y-AH848 of No 400 Squadron as recorded August 18 1941. The scheme illustrated represents the norm for a Tomahawk of this period. The aircraft joined 400 Squadron on June 18 1941 and was used by 171 Squadron from July 5 1942 to January 4 1943, when it passed to 430 Squadron with which it served until February 9 1943. Between July 1 and October 13 1943 the machine was used by 1684 Flight. 2 Typical plan view of a Tomahawk. Some machines had a mirror image of the pattern, and some were seen with colours reversed. 3 OE:B-AH896 recorded at Bottisham, August 23 1942. This machine had a long career, serving with Nos 403, 13, 26, 268 and 168 Squadrons, being depicted here in the latter's colours. That AH896 was coded OE:B at the time and in the hands of 168 Squadron there is no doubt, although it was not officially taken on charge by the squadron until much later. Unit letters were smaller and narrower than on many Tomahawks. 4 HB:Z-AH793 of 239 Squadron as recorded in January 1942. The machine wears the early style of colouring and probably had black under surfaces to the port wing in the manner of aircraft in the winter of 1940-41 for tactical exercise purposes. The Type A underwing roundel was outlined yellow. AH793 served with 239 Squadron between July 16 1941 and March 19 1942. On November 13 1942 it left London docks crated and was returned to America (drawings by David Dean).





26, 2, 268, 110 RCAF and 16 being re-equipped in that order. Hurricanes were expected shortly to be in the hands of No 26 Squadron at Gatwick, 2 at Sawbridgeworth and 268 at Bury. Then another problem reared itself — if either of the latter two were re-equipped then their bases must change as neither could take the new types.

A high-level meeting was held on January 1 1941 to thrash out the entire equipment programme. Introducing Blenheims fitted no tactical pattern and their disadvantages outweighed their availability, whereas the shortage of Hurricanes made them unavailable. Like a bolt from the blue the Air Staff suddenly decided to equip one Army Co-operation squadron with Curtiss Tomahawks for trials. They pointed out that the Tomahawk was the 'latest American fighter type with a speed of 350 mph', which sounded good. It had been intended that all should be for the Middle East, but deliveries to the UK had overtaken shipping space available for the transfer. They could carry up to six guns and R/T, but were not armoured.

There remains a suspicion that the Air Staff were, perhaps, not entirely fair in suggesting that the Tomahawk was an acceptable modern fighter. In December Fighter Command turned it down after brief trials conducted by 234 Squadron, on account of its poor altitude performance and mixed calibre armament, coupled with some handling problems. In no sense could it supplement — let alone replace — their Hurricanes and Spitfires in north-west Europe. Nevertheless it was soon plain that for Army Co-operation Command it was the Tomahawk or nothing. The Tomahawk was accepted in a lukewarm manner.

The first Hawk H81A-1 Tomahawks, some with only two .50 inch guns on the engine cylinder block, had arrived in September 1940, arising from a French order and designated Mk 1. Most also had two .303 inch wing guns. Many had French instrument calibration which needed changing and none had any armour. The all-up weight was around 7,215 lb.

At the end of 1940 a second large batch of Tomahawks arrived. These were Hawk H-81A-2s and 3s, equivalent to the USAACs P-40B/C and fitted with armour and self-sealing fuel tanks which pushed the gross weight to around 7,650 lb. These aircraft were designated Mk II, and had two .50 inch fuselage guns and four .303 inch wing guns. Of the 1,041 Tomahawks ordered for British use, only 112 Mk 1s, 61 Mk IIAs and 43 Mk IIBs ever reached Army Co-operation Command. The designation Mk 1 was restricted to aircraft with .303 inch guns whereas those with .50 inch wing guns were Mk IIAs or, in the case of aircraft numbered from AH991 et seq, and embracing the AK range and those following, the suffix B was added since these machines had American equipment. Army Co-operation Command Tomahawks had serials within the following ranges: Mk 1 AX900, BK 852-3, AH741-880; Mk IIA AH881-990; Mk IIB AH991-999, AK100-194. On A&AEE trials the Tomahawk 1 showed a top speed of 338 mph at 16,000 feet. It reached 15,000 feet in 7½ minutes which was a lot better than many of its contemporaries.

Boscombe Down's trials were flown using AX900 which Westland Aircraft



HB-Z-AH793 of 239 Squadron, subject of one of the drawings.

worked upon, like AH744 there between November 30 1940 and February 3 1941. Rolls-Royce had AH745 for engine development from November 12 1940 until its destruction in a crash in March 1941. AH863 went to AFDU Duxford on February 14 1941 and AH863 on February 28, also for tactical trials.

Before any Tomahawks could enter service much modification work needed to be undertaken at Southampton by Cunliffe Owen, among the first worked upon being AH748 (the first, which arrived December 2 1940) AH749, 750, 752, 756, 758, 759, 881 and 948, all of which were erected by the end of December 1940. The aircraft were not erected on arrival (mainly at Liverpool) in anything like chronological order.

Some of the early aircraft had their Sky under surfaces terminating well up the fuselage sides, but the Tomahawk was usually finished in Dark Green-Dark Earth with Sky under surfaces. Some had Dark Earth spinners, others black spinners. Before they were issued to squadrons they acquired Sky spinners and 18-inch rear fuselage bands. Underwing Type A roundels were usual, and some aircraft in use in the period December 1940 to about March 1941 had the under surfaces of the port wing black with the roundel outlined yellow. This black area did not apply to all Tomahawks, but it was commonly seen at the time. AH863 for instance had it, with the black terminating about half way across the belly. By April 5 1941 the black area had been replaced by Sky, also on AH861.

The introduction of the Tomahawk into the Command added a new aspect to training already much interrupted in the squadrons. Their additional commitments were AA calibration, air-sea rescue and the training of glider pilots. In June 1940 the Prime Minister had ordered the training of 500 parachutists and three contingents of 1,000 men to be glider transported, which called for 360 glider pilots initially carried out by operational squadrons using light aircraft.

On January 3 1941 the Vice-Chief of the Air Staff stated that he hoped to be able to equip three Lysander squadrons with Tomahawks, and promised two aircraft for Old Sarum and one to No 26 Squadron the following week for trials. With suitable camera ports and equipment it soon seemed possible that the Tomahawk would suffice and on January 30 No 26 Squadron was ordered to equip with the type.

During the third week of February No 26 Squadron began to receive its new equipment initially in the form of AH766, AH817, AH820 and AH822. This was not the first

Tomahawk squadron since, it will be recalled, No 234 Squadron had been flying trials with AH885, 886, 887 and 889.

Re-equipment with Tomahawks was still looked upon as an interim measure. Added to this the extent of re-equipment was controlled by airfield availability. Bury was too small so that 268 Squadron had to move to Snailwell. Accommodation and conditions at most stations were very inadequate which automatically cut the possibilities for conversion. Therefore only three squadrons were earmarked for conversion, Nos 26, 268 and 110 Canadian (later 400 Squadron). The Air Staff also had in mind each army co-operation squadron having a fighter-recce flight — not a good idea, for this meant mixed spares held by mobile formations.

On February 19 1941 Command accepted the Tomahawk as a suitable aircraft for general use. Its lack of camera fittings, absence of suitable radio to link it with ground forces and its unsuitability for night reconnaissance were against it, but it was the best that was then available. It was considered unsuitable for controlling artillery shoots, but the expected Brewster and Vultee aircraft should be able to do this soon.

By mid-April the Tomahawk programme was progressing reasonably, although the Allison engines were liable to overheating and full power running on the ground was giving trouble. Maximum boost was luckily not needed for take-off, and flying qualities were quite good. It was therefore now proposed to equip four more army co-operation squadrons with Tomahawks — Nos 239, 241, 613 and 2 making five squadrons in all. In addition to these No 403 Squadron of Fighter Command flew them for three months from Baginton and Ternhill.

Although the Army was still pressing to get rid of the Lysander, as it had been for the last ten months, the Air Staff again revised its plans in May to embrace re-equipment of only three more squadrons with Tomahawks. By May 5 1941 only No 26 Squadron had a full complement of aircraft and spares remained short, with engines proving troublesome. After further discussion with C-in-C Home Forces on June 16 the re-equipment programme was yet again changed and the following units were to arm with Tomahawks: No 26 at Gatwick, 400 at Odiham and 268 at Snailwell (all flying them already), and equipment to follow in 239 at Gatwick, 241 at Doncaster, 2 at Sawbridgeworth or an alternative base, 16 at Weston Zoyland and



Typical Tomahawk IIB AK184 in grey-green finish with Medium Sea Grey under surfaces.

4 Squadron at York. The Mk 1 was in use up to August when it was decided to equip Nos 2, 241, 613, 16 and 4 Squadrons as well as No 416 Strategic Recce Flight with Mk IIs.

During July and August 1941 the Tomahawk squadrons worked closely with the army providing tactical recce during a large number of exercises. There was much unserviceability mainly due to engine troubles, a fair number of flying accidents and little to maintain morale for these

squadrons had seen no action for over a year: when action first came to a Tomahawk squadron it was unexpected.

Flying Officer G. C. H. Jackson of 400 Squadron was on a training flight when he unofficially streaked across the Channel to Cap Gris Nez at low level and shot up a gun site. He was flying too low and grazed a wing tip as a result of which AH812 was slightly damaged and his temerity thus revealed, an unfortunate state of affairs.

Barratt was keen to do something to



Above AH762, a Tomahawk I used by 239 Squadron between June 11 and July 16 1941. Under surfaces are Sky. Below A formation of Tomahawks from 26 Squadron. All have black under surfaces for tactical exercise purposes. RM:D leading is AH893 used between June and October 1941. RM:Y is AH896 (IWM).



improve general morale. In August 1941 a conference was held at HQ Fighter Command to consider the possibility of Tomahawks participating in offensive operations over France. The question was — what form could such operations take? The aircraft certainly had limitations above 15,000 feet, and Mk IIs had only ball ammunition for their .30 inch guns. Steps had been taken to change two guns on some aircraft to .303s and these could fire a mixture of ball, incendiary and AP ammunition. Their W/T communication equipment, T1091, was, however, unsuitable since it was unable to contact other fighters. The C-in-C Fighter Command considered it unwise for Tomahawks to take part in the general offensive because of the limitations. He felt that *Rhubarb* operations, during which ground targets would be attacked and useful intelligence for the army obtained, might be possible if the aircraft operated in pairs during cloudy weather and at heights not exceeding 2,000 feet. These aircraft, he said, should come under Fighter Command when they flew operations and operate from its bases.

The Tomahawk squadrons were then allocated to fighter stations for tactical training: 26 to Kenley, 239 to Biggin Hill, 268 to Duxford and 400 to Middle Wallop. In the event of operations Tomahawks would operate from Manston (26 and 239 Squadrons), Coltishall (268) and Warmwell, Tangmere or Portreath (400). The plan was agreed on August 14.

No 239 Squadron, which received its Tomahawks in June, used AH793 and AH802 for the first *Rhubarb* flown to the Ostend area on September 19. All its subsequent operations were to the Belgian-French coastal area, and they continued at a steady rate until May 1 1942. This latter was a *Night Popular* (the first of which was flown by the squadron on April 29 1942 using AH831). The squadron's most eventful operation had come on April 22 when five Fw 190s were seen and AH844 was shot down by flak near Ostend. The name of the operation had been changed to *Popular* on December 9 1941 to distinguish it from Fighter Command operations.



The second Tomahawk squadron to commence operations was No 26 which had been fully equipped since May. Its first sorties were flown from Manston on October 16 by AH887 and AH857, and by AH833 and AH773, over the Le Touquet area. This squadron operated rather spasmodically until January 1942 when AH839, 857 and 822 made the final sorties, to the Harellet area. No 26 soon after re-equipped with Mustangs.

Third, and the only other squadron to fly *Rhubarbs*, was No 400. It commenced operations on November 6 from Tangmere when Wing Commander Kerby and Pilot Officer Jackson flew to the Le Cayeux region. On November 8 Pilot Officer English had to ditch AH845 in the Channel possibly due to engine failure. An ASR launch took him to Lyme Regis. He was able to confirm that it was possible to ditch a Tomahawk successfully despite the large nose air scoop. All the Tomahawks were now grounded for engine modifications, after which operations were resumed on November 22. Flight Lieutenant Morris and Pilot Officer Knight set off on a *Rhubarb* to Le Havre on November 27. They came the nearest of any to destroying an enemy aircraft but lost their Bf 109 in cloud. Operations continued and in December Jackson and English flying from Merston were vectored towards some Bf 109s near Beachy Head. One managed to get on to the tail of English and a fierce battle took place as a result of which both Tomahawks were shot down off Etaples. No 400 Squadron flew their last operation on January 4 when oblique photographs were taken of the Le Touquet and Berck areas from 200-300 feet.

During the period of operations *Populars* were flown over coastal areas and slightly inland, between the north-west tip of France and the Zuyder Zee by pairs of aircraft. In addition to shooting up ground targets, oblique photographs were taken by an F24 camera mounted on the port side of the rear fuselage, and there was much visual reconnaissance.

Up to the period of operations the Tomahawk markings were unchanged. Some aircraft acquired a black individual identity letter under their starboard wing read from ahead, as on SP:A,P,Q seen at Snailwell on September 6 1941. Before they ventured to France the Tomahawks of the three squadrons earmarked for operations were repainted in Dark Green-Dark Grey with Medium Sea Grey under surfaces and Sky unit letters. Serials remained black. Outer wing leading edges were yellow, bringing the aircraft into line with standard Fighter Command colours. Tomahawks in the remaining squadron retained their Dark Green-Dark Earth-Sky camouflage visible, for instance, on RZ:E,F,L of 241 Squadron at Bottisham on January 6 1942 and on NM:Q and D at Snailwell on March 31 1942. A changeover to the grey-green scheme gradually took place during the spring of 1942 on all the Tomahawks of the Command, RZ:J and AH928 featuring it at Bottisham on April 2 1942. Two days later at the same station HB:T-AH789 and AH982 were wearing these colours, which had become standard by August 1942.

On January 6 1942 the Tomahawk establishment in the Command was for 94 Tomahawks in squadrons and 28 at No 41

OTU responsible for pilot operational training\*. Only 54 of these were serviceable and another 21 fitted out for operations. Therefore 41 OTU was reduced to a strength of 12 aircraft. The troubles encountered were lack of spares, mechanical unreliability and much trouble with the Allison engine. Rolls-Royce were helping out by producing gears and couplings for 44 aircraft, and orders had been placed for generators and drives in America, but there were the inevitable delays on these. The general outcome was that the Command could no longer sustain Tomahawk operations over France, and only sufficient support was available to allow 239 Squadron to continue *Populars*.

Although the strength was set at 80 + 14 aircraft the number held by squadrons was 86. Barratt, as soon as he had news that the Mustang would come along, planned on keeping Nos 231, 400 and 414 Squadrons equipped with 48 + 2 Tomahawks.

#### Squadrons equipped with Tomahawks in Army Co-operation Command

Squadron	Unit letters	Approximate period of use	Bases, notes
2	XV	8.41 - 4.42	Sawbridgeworth. Last Tomahawk AK107 left in 12.43. Example XV:S-AH942.
4	TV	1942	Clifton, York. Only used three, AH791 and AK101 4-7.42 and AK155 1-4.43.
16	Nil	2.43 - 6.43	Andover. Only used three.
26	RM	2.41 - 3.42	Gatwick. Re-equipped with Mustangs 3.42, but last Tomahawk left 11.43. Example RM:Y-AH896.
168	EK/OE	6.42 - 11.42	Formed Snailwell 15.6.42. Some were seen coded FK, although letters may have been incomplete. At Bottisham 13.7.42 - 11.42 where no EK/FK Tomahawks were ever seen. Letters OE much in evidence now thought to be 168 and not 268 Squadron. OE:A-AK118 served with 168 Squadron 14.6.42 - 17.12.42. BK853:OE:P in use 6 - 12.42.
171	?	6.42 - 9.42	Formed 15.6.42 at Gatwick, to Odiham 11.7.42, Gatwick 25.8.42. Received Mustangs 9.42. Example AH909. Most retained until 1.43.
231	MV?	8.41 - 6.43	At Newtownards, to Long Kesh 11.12.41, Maghaberry 2.42, Long Kesh 20.11.42, Clifton 20.3.43. Mustang received 6.43. Equipped very slowly.
239	HB	6.41 - 5.42	Gatwick. Used a few Hurricanes 1 - 3.42. Received Mustangs 5.42. Example of Tomahawk AH829:HB-F used 9.6.41 - 11.2.42.
241	RZ	8.41 - 11.42	Only partially equipped, main equipment Mustangs from 3.42. Based at Bottisham, to Snailwell 11.7.41 and detached to Macmerry 22 - 28.7.42. Returned Bottisham. Example AH929 used 8.41 - 3.42.
268	NM	5.41 - 6.42	Snailwell. Received Mustangs 6.42. Example AH849.
400	SP	4.41 - 7.42	Base Odiham. In October 1941 the Squadron's Hiawatha insignia was added to the cowlings of the aircraft. Example SP:Y-AH848.
414	RU	9.41 - 6.42	Formed 7.9.41. Base Croydon. Example RU:V-AK185 used 29.11.41 - 22.6.42.
430	G9	1.43 - 2.43	Formed 1.1.43 at Hartford Bridge, next day moved to Dunsfold. Completely equipped with Mustangs by 3.43. Example AH910 used 4.1.43, crashed 18.2.43.
613	SY	9.41 - 4.42	Doncaster. Example AH931.
No 1 School of Army Co-operation & 41 OTU		6.41 - 9.41 9.41 - 11.42	41 OTU formed from No 1 SAC 20.9.41 at Odiham, moved to Hawarden 15.11.42 at about which time the Tomahawks were withdrawn. Examples: 1 SAC AH996, No 41 OTU AH972.

In addition to these squadrons Nos 13, 169, 170 and 225 from time to time held one or two Tomahawks on strength. The dates given in the tabulation relate to the periods

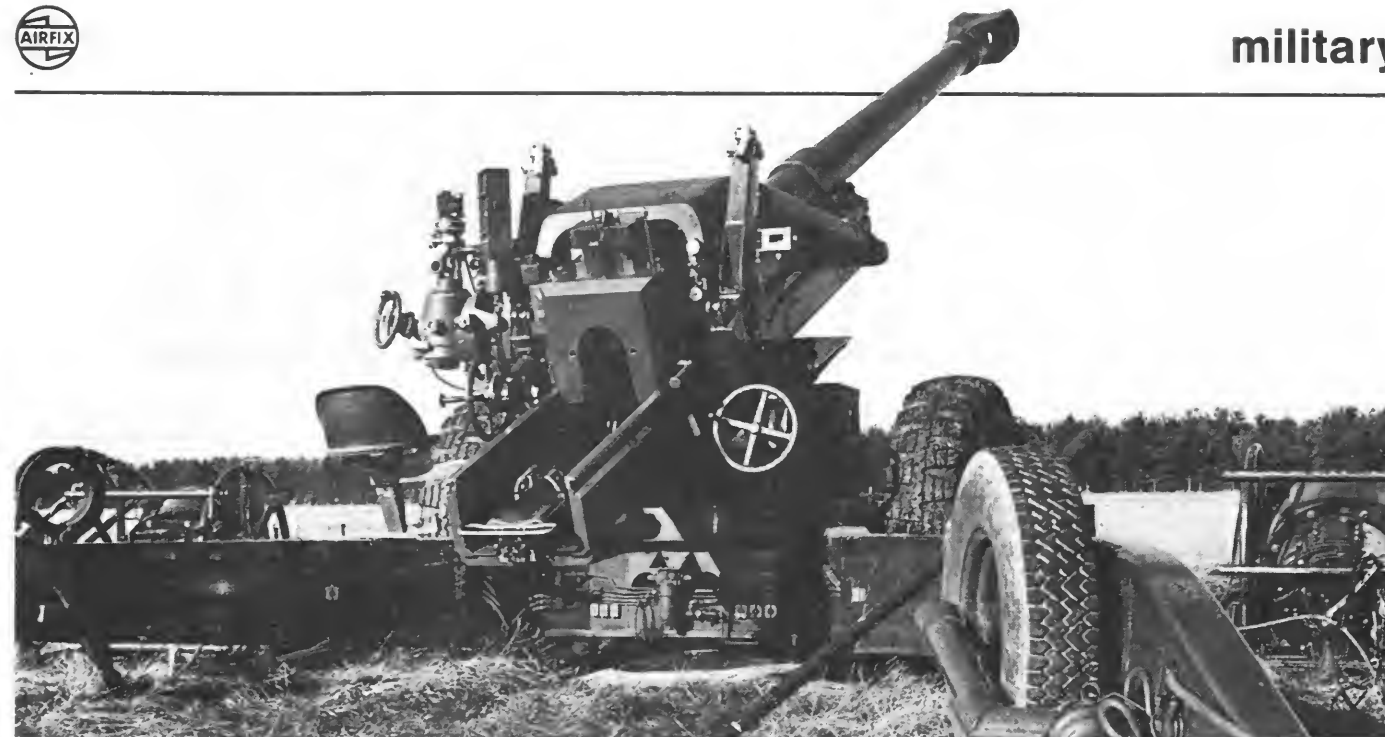
January 1942 also saw the fitting experimentally to one machine of a Philip & Powis target-towing gear, but this never progressed in the Command.

After No 239 Squadron was withdrawn from operations the British-based squadrons saw no further operations and retained their equipment for front line use only until the Mustang took over.

Arrival of the Mustangs threw up some spare Tomahawks with which Nos 168 and 171 Squadrons, two of the new army co-operation squadrons formed in June 1942, were for a time equipped for tactical training. To improve the Tomahawk's TacR usefulness, vertical cameras were installed in some machines of Nos 4, 170, 239 and 171 Squadrons in August 1942 and at this time No 2 Squadron managed to fit an F24 in the starboard wing of the Tomahawk. But its days were already numbered and the Tomahawk was a memory in the Command by the end of 1943. □

\*The distribution of these was established as follows.

Squadron	Initial equipment	Initial reserve	Aircraft actually held by squadron
2	8	2	AH857, 899, 908, 909, 930, 934, 941, 942, 945, 946
26	8	2	AH763, 791, 800, 822, 862, 864, 896
231	18	0	AH898, 920, AK100, AK166
(Composite squadron)			
239	8	2	AH752, 786, 793, 796, 802, 829, 831, 842, 844, 846
241	8	2	AH757, 904, 929, 947, AK121, AK136, AK137, AK139, 140
268	8	2	AH769, 775, 784, 790, 792, 832, 834, 849, 855, 897, AK122
400	18	0	AH748, 761, 776, 787, 806, 817, 818, 824, 825, 848, 863, 884, 889, 891, 895
414	8	2	AH906, AK119, AK128, AK161, AK163, AK185
613	8	2	AH771, 836, 905, 931, 932, 939, 944, 950, BK853, AK118, 156, 162, 167, 190



## The gun of the future—FH70

Terry Gander takes a look at one of the latest pieces of heavy artillery

AFTER 1945 THE British Army was well equipped with medium artillery in the shape of the 5.5-inch gun-howitzer and the need for an eventual replacement was, over the years, deferred time and again when future needs were discussed. For some time it was even considered that medium artillery would be replaced in the field by some form of guided missile system, but it soon became evident that battlefield guided missiles were no substitute for the cost-effective flexibility of the conventional gun. Thus, during the early 1960s the Ministry of Defence issued a General Staff Target requirement for a replacement for the 5.5-inch gun. At around the same time a NATO requirement for a close support heavy gun was also issued and it was not

long before the two different concepts were found to have some common points. As a result a bilateral agreement was drawn up between West Germany and the UK to develop a new 155 mm gun. The UK was given the task of designing the carriage and West Germany concentrated on the gun itself, but there were many overlapping areas (for instance, the UK was to design and manufacture some of the ammunition). In 1966 the first wooden mock-ups were shown and prototype manufacture was ordered under the design designation of FH70, and in 1970 Italy joined in the agreement.

By 1970 the first Phase 1 prototypes were in being and on trials. The details have changed in many ways since the early

Top of page Breech-end view of the FH70 in its firing position. Below Self-propelled! The FH70 travelling by means of its VW engine (MoD photos).



#### FH70 data

Calibre	155 mm/6.1 in
Length of barrel with muzzle brake	6,750 mm/265.8 in
Length of bore	6,038 mm/237.75 in
Muzzle velocity	827 m/s/2,713 ft/sec
Elevation	-5.5° to +70°
Traverse	27.5°
HE shell weight	43.6 kg/96.12 lb
Length travelling	9,450 mm/372 in
Length firing	12,430 mm/489 in
Width over wheels	2,590 mm/102 in
Approx weight	8,800 kg/19,404 lb
Normal rate of fire	6 rounds per minute

Phase 1 guns but the basic concept is still the same. From the outset the FH70 was designed to have a measure of built-in mobility in the form of a Volkswagen 1,700 cc auxiliary power unit (APU). This APU enables the FH70 to be moved over distances up to 20 km across country, and when not required the APU can be removed from the carriage. The carriage is a heavy split trail design and the cradle is capable of high angles of elevation. In action the gun does not rest on its wheels but on a firing platform under the main axle. The gun barrel itself is of fairly conventional design and is fitted with a muzzle brake, and it can fire an HE projectile up to 24,000 metres (26,256 yards), but with special ammunition this can be extended to 30,000 metres (32,820 yards).

The Phase 1 prototypes were followed by eight Phase 2 guns which incorporated the modifications found to be necessary by firing trials. These were superseded by Phase 3 prototypes which are the final pre-production examples. The Phase 3 guns were used for extensive field and range trials by the West German, UK and Italian armies. These firing trials were carried out on the German Hohne ranges, but some firing was carried out in Sardinia during 1974. The British contingent of the Joint User Trials was formed from members of 94 (New Zealand) Heavy Battery, who manned a 'troop' of two guns throughout the trials and at one time managed to fire 119 rounds in one hour (this entailed the handling of some seven tons of ammunition!).





These trials were completed by May 1975 and the resultant modifications are at present being built into the production lines. Production of the FH70 is being divided between the UK, West Germany and Italy. West Germany will produce the APU, much of the fire control equipment and specialised ammunition. The UK will produce the carriage, HE ammunition, and also will be the head design authority using Vickers Ltd as the main production overseer. Italy will produce the recoil mechanism and will also produce some ammunition. But as already mentioned, there will be some 'overlap' areas.

One of the most advanced design features of the FH70 is its ammunition. The HE shell weighs 43.6 kg (96.12 lb) but there are smoke and illuminating rounds under final development. In addition there are extended range projectiles — one is a sub-calibre fin-stabilised projectile and an American rocket-assisted projectile can also be fired. One of the more unusual projects still under review is a round which can dispense mines over a wide area to counter mass tank attacks, and an even more unusual round which is under development in the USA can deliver a miniature TV camera slung from a small parachute for battlefield surveillance — this may be adopted for the FH70. As well as the rounds developed for the FH70, it can fire existing 155 mm ammunition stocks, most of which are of American origin. It has not been thought necessary to develop an AP round since a hit from a 155 mm shell will normally 'kill' any battle tank.

While the partial standardisation of a NATO gun is to be applauded, a retrograde step has been taken with the adoption of three tractors for towing the FH70 into action. The UK has developed a new Foden ten-ton 6x6 vehicle with a smaller vehicle to act as a 'limber' for the ammunition. Italy will use a new Fiat 6x6, the TM69, while the Bundeswehr will use a new 6x6 amphibious tractor. It is hoped to run a feature on these vehicles at some future date.

Further in the future is the self-propelled SP70. This is a self-propelled counterpart of the FH70 which will fire the same ammunition from a new barrel. Some trials have already been carried out in Italy with a prototype gun fitted to an M109. The final form of the carriage and suspension of the SP70 has apparently yet to be determined but early mock-ups seem to indicate that the turret will resemble that of the M109 and the suspension would seem to owe much to that of the Leopard tank series. But as the chassis is expected to be the same as that used by the projected West German-UK MBT80 battle tank it will be some time before the final form of the SP70 can be determined and the SP70 is unlikely to be in service before the mid-1980s.

To return to the FH70, the first service examples will probably go, in the UK, to a battery of 1 Regiment, Royal Horse Artillery based at Tidworth. Until then, the towed medium artillery batteries will continue to use the faithful 5.5. By the time the FH70 enters UK service the 5.5-inch gun will have been in use for over 35 years and can thus be deemed ready for a change. One wonders how long the FH70 will serve — it would seem likely that its service term will be even longer than that of its ancestor. □

# NEW KITS AND MODELS

## Short Mayo Composite

IT IS interesting to see that two manufacturers of vac-form kits have pooled their talents in a 'composite' effort to produce an interesting and unusual model that is most unlikely to ever appear in injection moulded form.

Contrail Models of England and Airframe of Canada are the two concerned and the subject chosen, for what to our knowledge is the first joint effort by any manufacturer, is the Short Mayo Composite. The kit consists of two packages, one containing parts for the Short Maia mother craft and the other the Mercury satellite seaplane, the English company being responsible for the former and the Canadian the latter.

Formed from thick white plastic card, the models are similar to other kits from these two concerns, which means that they are generally accurate in outline but rather crudely detailed when compared with other manufacturers' kits. Nonetheless, the models assemble easily once all the parts are removed and sanded smooth along the surfaces that are to be joined. A considerable amount of work is required and the kits should not be tried by those who have had no experience of working with vac-forms.

The drawings provided are to a much higher standard than is usual and the exploded views are easy to follow. One criticism which has nothing to do with the kits, is the way the drawings are packed. On the review sample the staples used to secure the clear plastic bag container, passed right through the drawing in two places. These proved very difficult to remove and a considerable tear was made in the drawing of Maia before it was

realised that they were firmly attached to the packing. It may be that we were unlucky, but it is a point well-worth bringing to the attention of the manufacturers.

Transparencies are moulded in very thin acetate and Maia also includes a sheet of transparent material for the fuselage windows, which is not really satisfactory but one must keep in mind the limitations imposed by this method of kit production.

Definitely a model for the experienced and one cannot help feeling that a high percentage of those purchased will probably never be completed.

## Scharnhorst and Gneisenau

THE TWO LATEST Revell ship kits depict the famous German battlecruisers *Scharnhorst* and *Gneisenau*. They will unfortunately invite comparison with Tamiya's recent kits of the same subjects, and, frankly, leave quite a lot to be desired.

However, keeping in mind the reasonable unit price of £1.10, they make up into models which, though likely to disappoint the serious modeller, bear a good overall resemblance to their elegant prototypes.

The kits are very easy to assemble but the parts are in general heavily moulded and rather loose-fitting. Although there are no startling outline inaccuracies, many of the smaller pieces which one might expect to be supplied as separate items, such as anchors and boats, are moulded integrally with the main components, and many parts are of a very generalised shape, particularly some of the decks and platforms. Modifications can be made, but a lot of hard

Continued on page 302



# MODELHOBBYS

## PLASTIC KIT SPECIALISTS — ASSOCIATE MEMBER I.P.M.S.

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Polikarpov I-153	1/72	50p
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T38A(F-5B) Talon	1/72	40p
AGM3 Mod 22 Zero	1/72	50p
AGM3 Mod 32 Zero	1/72	50p
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P-47D Bubbletop	1/72	55p
Typhoon IB (framed)	1/72	55p
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BAC Lightning F6	1/72	55p
N.A. Mitchell II	1/72	55p
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Curtiss F1C-2 biplane	1/72	65p



labour would be required to produce competition-winning models.

The two kits are virtually identical, the differences being confined to the main-mast and after control tower, and, in addition, *Scharnhorst* has torpedo tubes and *Gneisenau* a second catapult and float-plane.

Neat sets of decals for the aircraft are provided, as are the customary flag sheets and display bases. The completed models scale out to around 1:570 and are therefore consistent with other recent Revell ships.

#### P-38J Droop-Snoot

THE P-38 IS a popular subject among modelers of World War 2 aircraft who usually associate this unconventional aircraft with fighter aces or the Pacific theatre. But it did in fact perform many tasks ranging from photographic reconnaissance to night fighting, and ground attack to bomber escort. It was also used with some success as a bomber where its load-carrying capability and long range made it ideal for high speed strikes at strategic targets. In this field it was somewhat limited as far as pinpoint accuracy was concerned since there was no provision for accurate bomb-sighting. But the P-38J. Droop-Snoot changed all this as it was used as a lead ship carrying a bombardier equipped with an accurate bomb-sight.

This two place version of the 'Forked tailed devil' had all its nose armament removed and replaced by a clear plexi nose containing the additional crew member and his equipment.

The Droop-Snoot is the subject of Revell's latest 1:32 scale model and captures the original well.

Moulded in deep green flash-free plastic the kit goes together well and contains a wealth of detail. The cockpit comprises eight parts with instrumentation etched into the instrument panel and side consoles, no decals are provided for these pieces so careful use of the paintbrush is called for if the cockpit is to look authentic.

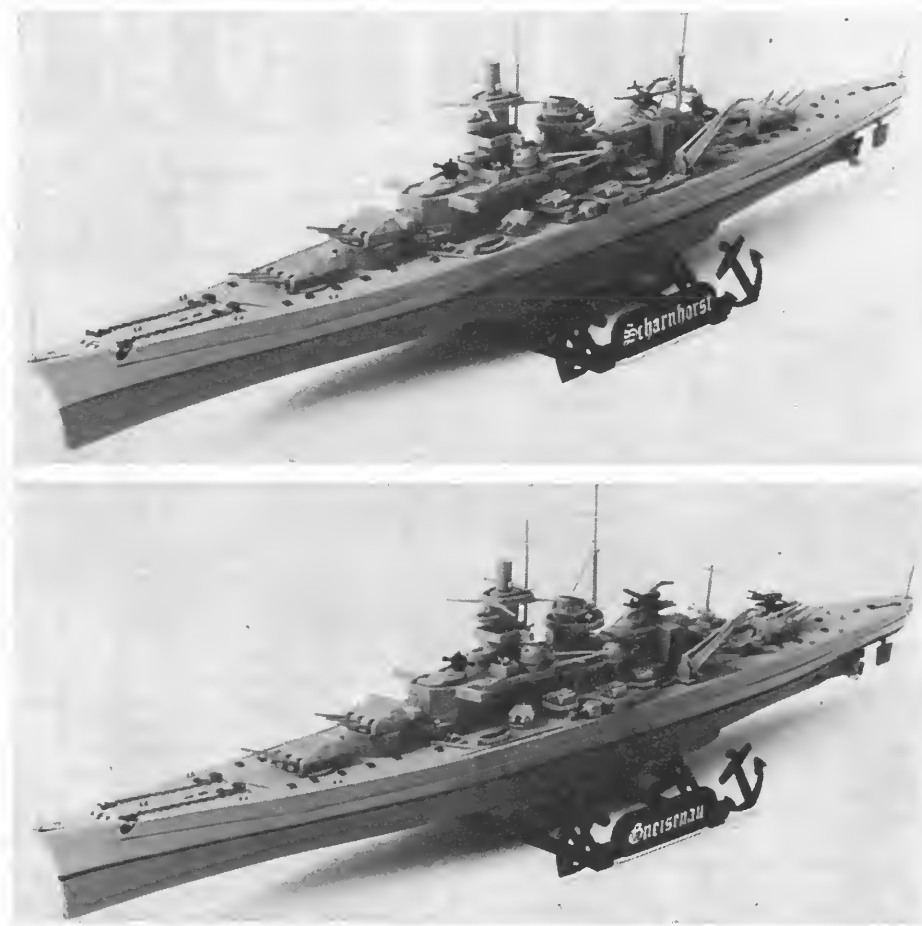
A detailed engine is included for installation in the port boom and this is visible via a removable panel.

Surface detail consists of raised rivets which should be removed and the control surfaces are moulded as integral parts of the wings and tailplanes. The undercarriage is sturdy but a lot of weight is needed in the nose if the aircraft is to stand on its tricycle undercarriage. This can present problems due to the clear nose but there is plenty of room in the wing leading edges and the starboard boom, but remember to keep the weight well forward of the main gear.

Decals are nicely printed with a host of stencil markings and are for an aircraft of the 20th Fighter Group, 77th Fighter Squadron, US 8th Air Force. A photo of this kit appeared in our November issue. Price is £2.35.

#### 1:48 scale Lancaster

ALTHOUGH RELEASED in this country before the Monogram B17 reviewed in the November edition, a sample of the Tamiya Lancaster B1/111 was not available before the American kit, hence the apparent reverse order in which these reviews have appeared. Comparison of the two models is inevitable with the net result that there is in



Revell Scharnhorst and Gneisenau.

fact very little to choose between them.

Interior detail on the Lancaster is adequate but not as fine as that on the B17, it is also confined to the areas that can be readily viewed through the beautifully clear transparencies, the remainder of the fuselage interior being simply undetailed plastic. This is not of major importance unless you intend to open doors or hatches or even make a model with cut-away sections, in which case a lot of work is involved in adding comparable interior structure.

Overall accuracy is excellent and of particular note are the finely moulded control horns, mass-balances, guns and aerials. Like the B17 the Lancaster is devoid of gimmickry apart from the two Merlin engines that can be fitted. These make the building of a maintenance diorama an attractive possibility but for those who wish to omit these components alternative parts are included.

The instructions are easy to follow although some of the quaint translations from Japanese will cause frustration as well as light relief. One wonders why it is not possible for Tamiya — or other Japanese manufacturers — to pass their translations to a suitably qualified person in England to put right before they commit them to print. It is strongly recommended that the instructions and drawings are carefully read before construction starts and a very early decision as to which particular model one is making is taken.

Parts fit together well and this was a model in which the tube of filler was never used.

The decal sheet is nicely printed and in-

cludes instrument panels as well as stencil markings. The yellow surrounds to the codes for 'S — Sugar', which is the Lanc in the RAF Museum, are too wide but there is little that can be done about this as trimming of the interior areas of the P, O and S is very difficult. The kit includes a brief history of the Lancaster written by Chris Ellis as well as a full colour sheet showing typical camouflage used on this type of aircraft.

To sum-up, this is a very fine model indeed and one hopes that it is the forerunner of similar scale models of bombers, how about a Halifax next?

#### Paystar 5000 Logger

THE ERTL COMPANY has scored another first with this kit. It is the first logger kit to be produced in 1:25 scale, and is well up to the usual ERTL standard. The firm has used the basic Transtar 5000 tractor unit for this, as they did on their earlier dumper truck.

The finished model when assembled is in the region of 20 inches long. The mouldings are crisp and flash-free, the detailing being excellent. This kit is moulded in four colours — orange cab and bonnet, black chassis, white log trapping assemblies on the trailer, and chromed wheels and bumpers, etc. The chromework is very nice indeed, in fact one of the best we have seen on a plastic kit. All the tyres are well detailed and moulded in vinyl.

ERTL actually use truck manufacturer's blueprints to scale down for their models, thus ensuring accuracy. The instruction sheets are clearly laid out and easy to



follow, with a list of all the parts at the back and photos of a finished model as well as the real thing to assist super-detailing. A sheet of manufacturer's 'gen' from International about the real truck is even included, with details such as wheel base, weight, equipment and options, etc.

#### John Deere 310

THIS RECENT ERTL kit of the John Deere 310 Backhoe-Loader is moulded in the basic yellow colour of construction vehicles, and our preliminary comments are the same as for the Paystar Logger. There are no chrome-plated parts (correctly) in this kit though. It is also scaled down from manufacturer's blueprints for accuracy, and this is reflected in such things as the engine detail and accurate large industrial tyres.

The 'Backhoe-Loader' may be an unfamiliar term to many readers, but simply it is the American equivalent of our own excavators, built on a tractor with a scoop at the front and grab at the rear, somewhat similar to a JCB. Again, actual vehicle photos are included in the instruction sheet for detail modellers.

To summarise, two excellent kits of two unusual subjects in 1:25 scale, and well worth seeking out. Incidentally, ERTL also produce a magazine devoted to their own trucks called the *Blue Printer* which is available on subscription only from the ERTL Co Inc, Dyersville, Iowa 52040, USA.

#### Revell Ju 87G-2

REVELL HAVE now joined the ranks of those who have a Ju 87 in their ranges but in so doing have achieved no further distinction as the model is not as accurate as one would hope for in a new release.

The aircraft is the popular G-2 tank-busting version — when will somebody produce an accurate B version? — and first impressions are of a nicely moulded kit with very fine detail. Unfortunately the model does not scale out to 1:72 as the fuselage is a scale 14 inches too short and the wingspan comes out just over 50 feet instead of 49 feet 2½ inches.

Apart from these shortcomings the model goes together well and the cockpit interior includes a well detailed seat, armoured headrest, instrument panel, control column and a pair of machine-guns.

A Jumo 211J engine, together with the bearers that are clearly seen in photographs of the aircraft showing it with its cowlings removed, are included, and this will form the basis for additional detailing by those who like to depict their models with inspection panels removed.

The model can be assembled as a D-5 version with bombs and a cradle to swing the under-fuselage weapon clear of the propeller arc. For the G-2 there are the usual underwing cannons which are well detailed.

Two sets of markings are included — one for each version — and it is encouraging to see that these include the Swastika which is so often missing from kits of Luftwaffe aircraft, as well as an instrument panel which again is a rarity in most 1:72 scale kits.

If you are prepared to accept the scale anomalies and put in some work on improving the bombs, thinning the dive brakes, etc, then this latest Revell kit is well worth purchasing.

# NEWS FOR WARGAMERS

#### The Battle for Germany

SIMULATIONS PUBLICATIONS INC continue to expand their moderately-priced folio series of games with a simulation of the final battle for Germany in 1945. Perhaps to keep prices low, SPI appear to be restricting the series to quite simple games, and 'Battle for Germany' is no exception. It would, however, be wrong to assume that they present no challenge to the experienced gamer, or that novel ideas are lacking.

'Battle for Germany' is really a power struggle between the Soviets and the Western Allies since each is trying to grab as much of Europe as possible — and the battle need not cease with the destruction of the Germans. The game uses die-cut counters depicting corps and army sized units on a map of Europe showing the Eastern, Western and Italian fronts as they stood in December 1944.

In the three player version the players control either the Soviet, German or Western Allied forces, but since the German units are segregated into East and West Germans, a four player game is also possible. The two player game is, perhaps, the most fun, because in this version the players control either the Soviet or Western Allied units and, additionally, the German units facing the opposing player, so that the Soviet player, for example, will be fighting against the East Germans while simultaneously manoeuvring the West Germans against the Western Allies! This gives the players the best of both worlds, each being able to play the aggressive attacker and the tenacious defender at one and the same time.

'Battle for Germany' is a well balanced game as it stands, but optional rules can easily be devised for increased realism for those players who find its simplicity unsatisfying. Available from Simulations Publications UK, Crown Passages, Hale, Altrincham, Cheshire, WA15 9SP, price £2.15, and also issued with 'Strategy and Tactics' magazine No 50.

#### Spartan and Legion

THESE TWO games are being treated as one because they are adjacent parts in the SPI PRESTAG SERIES (Pre-Seventeenth Century Tactical Games) and played to the same set of standard PRESTAG rules. A fuller treatment of the PRESTAG standard rules is given in the review on 'Chariot', first of the series, in *Airfix Magazine* October 1975.

In general, these rules allow a wide degree of flexibility in approach to the game: it can be an absolutely basic and 'unrealistic' affair which treats the barbarian militia and veteran legionary just the same, and assumes that both are capable of the kind of discipline, tactical knowledge

and self-possession of the modern infantryman: or, by addition of optional Panic, Facing and Melée rules, and a SiMov sequence, it reproduces quite accurately the true conditions of the time in which a commander could only control his army by keeping it around him in a solid lump and pushing against the enemy like a rugby scrum, with his cavalry as the highest tactical weapon of surprise.

In general, the more complicated and realistic the game, the less fun to play — as with the ancient and medieval SPI wargames which this series has replaced. If, for example, there is no provision for Panic, the battle of Cannae can end up with Carthaginian and Roman armies slaughtering each other to the last skirmisher, and Hannibal marching off to conquer Rome with one unit of Oriental Cavalry — this happened on first playing the scenario! It was still an enjoyable game, though: and even the Panic rule would have been unrealistic, as both armies reached it almost simultaneously. One imagined both armies routing at full speed for opposite corners of the map, while Hannibal and his opposite number beat each other over the head with flagpoles! Mind you, there were battles like that.

Each game, in addition to the standard PRESTAG rules, has its own exclusive rules and of course scenarios. 'Spartan' has an immobile Darius, an Alexander who like Napoleon is worth 3,000 men in melée combat, and also — elephants. 'Elephants' are peculiar. They may be engaged in organised combat only once. After this, they run rampant, move randomly until destroyed by enemy or friendly combat, or moving into certain terrain fatal to them. I well remember Pyrrhus being chased by his own elephants (which started fighting each other) and only being saved by the intervention of a handy swamp. This is accurate; every elephant driver had a large mallet and spike to hammer into the beast's head when it rampaged. The scenarios, although showing some surprising omissions, are well-thought and nicely balanced.

'Legion' — obviously — contains optional rules for the use of Legionaries and Byzantine Cataphracts. Legionaries can form testudo (at great cost to their movement), and do not panic in most scenarios, whatever the losses. A testudo cannot be flank attacked. Cataphracts are the 'action men' of the Middle Ages; they can fire and melée in the same move, dismount and fight as skirmishers, or as swordsmen. Nevertheless, fighting the hypothetical scenario, a Belisarian Army was firmly trounced by a Marian Army sat on a hillside while the cataphracts and oriental cavalry rode round and round like Red Indians, to no effect.

The scenarios, if fought in turn, are like a guided tour through Roman military his-





tory; and one which well illustrates the splendid discipline of the Roman army at its highpoint, and the shattering effect of Ctesiphon and Adrianople. It was of course, not wholly realistic in the sense of the right side winning; at Chalons, as Attila the Hun, I drove the Roman/Gothic army off the map in ten moves. That is part of the fun.

In general, the result of PRESTAG is as SPI intended, to satisfy both those who desire a simple format and those who can assimilate relatively complex restrictions like leadership radius, facing, etc. Both of these games are thoroughly worth buying — probably more so than 'Chariot'.

Both games cost £4.55 each from Simulations Publications UK.

### Saratoga: 1777

IT SEEMS TO be a rule that, the better the presentation and appearance to the eye of a board wargame, the more basic is the content; the 'Xmas-present-for-young-Johnny premise'. 'Saratoga: 1777' is plushly presented, with a solid board and large unit counters which even the clumsiest of little fingers would not upset. The rules are correspondingly primitive. All units have the same basic movement capability — which coincidentally happens to be the distance between every town/village/fort on the map and its neighbour. 'Rapid movement' enables some units, on a lucky dice throw, to double its movement (ie to the village-after-next).

In the normal game, all units have the same combat power and will each kill one-third of an enemy unit — so you move in stacks of three, six, nine, etc. The combat computation under the optional rules is closer to S&T ideas, and has one refinement: the winner loses casualties as well as the loser, which is a piece of battle realism not found in many more 'realistic' games. Nevertheless, the reliance on the dice in the optional rules is excessive: the difference between 1 and 6 for the loser can be 20 or 66 per cent casualties!

Rules of supply, entrenchment, fortification and militia are adequate, and a scheme for simultaneous movement also included. Perhaps the most interesting rule is the 'Optional Burgoyne Rule'; to mimic Burgoyne's strategic thinking — prevent the enemy from knowing what you are going to do next, by not being quite sure yourself — this requires the British player to throw before moving. If he throws a 5 or 6, he can't move; if anything else, he moves at Rapid Movement pace — an operation like bumping your car to a garage using the starter.

Obviously, this is *not* a game for the established player, although considering its limitations it can produce a good campaign. It is an excellent introduction to gaming, however, being easy to play while incorporating many features of more complicated games on to which young Johnny will hopefully pass. An Xmas present? Why not — it's attractive enough for even my wife to say, 'Doesn't it look pretty?'.

'Saratoga: 1777' is available from Simulations Publications UK, Crown Passages, Hale, Altrincham, Cheshire, WA15 9SP, for £4.45, with discounts of up to 25 per cent for S&T subscribers.

# BOOKS FOR MODELLERS

## Modelling

**Military Modelling Annual 2**, edited by Chris Ellis. Model & Allied Publications, Argus Books Ltd, Station Road, Kings Langley, Herts. Price £2.95.

IT IS UNUSUAL, to say the least, for the most immediately striking feature of a book to be the quality of the binding, but this is unfortunately true of the latest *Military Modelling Annual*. Six pages simply fell out of the centre as we opened it, and several more were coming loose by the time we had finished a first browse through the book. So when buying a copy, make sure all the pages are there first!

That aside, this book is quite attractively produced with nine pages of colour and 12 pages of advertisements, and contains the expected miscellany of articles on military vehicle and figure models, uniforms and other related subjects.

The book begins with an article on making radio controlled model tanks which would have been more interesting had the featured model of an Italian L6/40 (painted in German markings, with a British commander figure!) been more accurately detailed.

Next comes perhaps this book's most interesting and useful feature, an article on preparing your own scale drawings from which to make models, which shows how you can accurately scale from a photograph even if the vehicle is not photographed at right angles.

This is followed by articles on collecting and renovating old Britains soldiers and on the history of Lord Strathcona's Horse. Then come two Richard Simkin prints in full colour, described by Roy Dilley, and another colour illustrated feature on cavalry in the Indian Wars, which includes much useful modelling gen.

IPMS members will probably already be familiar with the next article, on the SdKfz 251 half-track, since it was originally published in *IPMS-USA Quarterly*, but it is still a useful article with good drawings.

The Annual's only nautical feature comes next, an article on the 'Halcyon' Class mine-sweeper HMS *Harrier*, by John Lambert, with excellent double-page plans and many photos.

'Scotland Forever', the next article, depicts two figures from the Union Brigade's charge at Waterloo. This is followed by a feature from Chris Ellis on simple wargaming using Corgi, Dinky and other diecast toys — fun for junior, then two simple 54 mm figure conversions for beginners.

D. H. Hagger's article on the French 8th Hussars 1793-1815 and Stephen Heap's on Bavarian infantry 1870-71 are both attractively illustrated in colour, as is Don Foster's on the XI Dragoons 1756.

Brian Molloy, taking a rest from the SS,

then examines German Fallschirmjäger organisation, equipment and uniforms, which is again illustrated in colour, though one wishes an alternative to the well-known heading photograph could have been found.

Another attractive figure modelling feature comes next, Norman Abbey's diorama of half a dozen US cavalry figures 'awaiting the final charge', which is illustrated in colour on the book's jacket.

An oddball but quite illuminating (!) feature on German vehicle lighting systems of World War 2 by Bruce Culver is then followed by a neat little diorama by Roy Dilley showing Royal Artillerymen testing a Gatling Gun.

Of more general interest, and particularly useful to beginners, is Ken Jones' article on military vehicle camouflage schemes and colours of World War 2, a handy primer on a complex subject.

'Machine-gun units of the Austro-Hungarian Army' is another interesting though rather specialised article on a much-neglected topic. This is followed by a feature on scratch-building the PzJg I in 1:76 scale, with the plans rather strangely printed to 1:48!

Last but no means least comes a short article on moulding wheels for military vehicles by John Sanders, and then the adverts.

Overall verdict — a mixed bag, as all annuals are bound to be, with perhaps rather too many features on fairly esoteric subjects to have a wide appeal, particularly at nearly £3 and very im-'Perfect'-ly bound.

## Aviation

**Duxford Diary**, published by the East Anglian Aviation Society. Obtainable from D. Crow, 9 Hay Street, Steeple Morden, Royston, Herts. Price £8.00, postage extra.

THIS IS AN excellent reprint of a volume of photographs and stories compiled at the end of the war to commemorate the stay of the US 8th Air Force at Duxford.

Only 500 copies have been printed, the proceeds of the sale being collected to build a memorial to the 78th Fighter Group somewhere in the Duxford area. That this should be undertaken by the East Anglian Aviation Society is proper in view of the fact that the society was instrumental in saving Duxford and doing so much to make it a going concern for others to exploit.

*Duxford Diary* relates in words and many rare pictures the story of the 78th from its arrival at Goxhill in December 1942. So much of Duxford remains as it was in the war years, probably more so than any other British airfield, that it is possible to relate situations illustrated to the present appearance of the station.

Completing the volume and bringing it up to date is a splendid colour reproduction of a photograph of the P-51 so super-



bly refurbished by members of the East Anglian Aviation Society.

Quite clearly a collectors' volume which will appreciate in value as the decades pass.

**Monogram Close-up 2: Junkers 288**, by Thomas H. Hitchcock. Monogram Aviation Publications. Price \$3.95.

IF YOU WERE around in the war years you may recall Air Publication 1480. Section B dealt with enemy aircraft, and many an enthusiast learned of the latest German aircraft through the amendment sheets. One type that kept appearing was the Ju 288, odd because it never came into view in real life. One half expected to see it at any time, particularly when the Ju 188 first called on us in late 1943. What we missed then can be seen in this excellent monograph. Its 32 pages are packed with rare photographs and copies of official drawings backed with concise and detailed text. The amount of development that went on with the Ju 288 is surprising and the author of this volume is to be congratulated on the thoroughness which has gone into his book.

**Focke-Wulf FW 190 in action**, by Jerry L. Campbell. Squadron/Signal Publications Inc, 3461 E. Ten Mile Road, Warren, Michigan 48091, USA. \$3.95, UK price unknown.

THIS IS THE 19th 'aircraft in action' title from Squadron/Signal, and is to the same format as previous books in the series — 'landscape' format, paperback, short on text and long on photos, with a double-page spread illustrating ten different FW 190 side views in full colour.

Many of the photos are truly excellent, and the book will be essential for any modeller building any FW 190 kit. It includes scale drawings showing the major differences between the various marks, line drawings showing armament development, rudder and cowling development, cockpit and undercarriage detail, and much more. Highly recommended.

**A-6 Intruder in action**, by Lou Drendel. Squadron/Signal Publications, Inc, 3461 E. Ten Mile Road, Warren, Michigan 48091, USA. \$3.95, UK price unknown.

ARGUABLY THE best all-weather strike aircraft the American Navy has ever had, the Grumman A-6 Intruder is an impressive though far from beautiful aeroplane which gave sterling service in Vietnam. The wealth of colourful markings which can be applied to the type, together with its action-packed history, also make it an especially interesting subject for modelers.

Once again, this paperback includes a wealth of large and clear black-and-white photos, numerous line drawings illustrating detail components, and a full-colour spread featuring three paintings by the author and two photographs. Unlike some similar titles, it also makes fascinating reading, thanks to the personal accounts by Commander Donald V. Boecker, CO of VA-85, who had some hair-raising experiences with the aircraft in the Far East. Also recommended.

## Military

**The Bruneval Raid — Flashpoint of the Radar War**, by George Millar. The Bodley

Head Ltd, 9 Bow Street, London WC2E 7AL. Price £2.50.

DESPITE ITS TITLE, very little space is devoted to the paratroop raid and at some points there is a tendency to forget the main point of the work. Rather it concentrates on the background and reasons for mounting such an operation and the battle of wits between British and German scientists developing Radio Direction Finding.

The text is concise and well written, giving an excellent exposition of its theme, although the raid is rather overshadowed by this, but falls down on a few points such as the references to the Germans having a 'blue' master searchlight controlled by radar. This was an optical illusion suffered by the pilots of both the RAF and Luftwaffe which has no basis in fact. There is also some confusion over the Rebecca/Eureka homing beacon used by the raiding force. Eureka was the portable element of the system and not Rebecca as stated in the book.

**Operation Sealion**, by Peter Fleming. Pan Books Ltd, 33 Tothill Street, London SW1. Price £1.25.

WE FOUND particular pleasure in reviewing this book, as it was one of the main sources for Terry Wise's series on Operation Sealion currently appearing in this magazine. The book is a reproduction of the 1958 edition (with 22 different and additional photos) and not only tells the full story of the German preparations for the invasion and the British counter-measures, but also gives a clear and sometimes amusing picture of what life was like in the British Isles from May to September 1940, and explores what might have happened if the invasion had not been cancelled.

It is interesting to note that on pages 269-273 the author describes the Auxiliary Units, he himself playing a leading role in this organisation, yet only a year or so ago, 16 years after publication of his book, national newspapers were 'revealing' these secret units 'for the first time.'

**Armies of the American Wars, 1753-1815**, by Philip Katcher. Osprey Publishing Ltd, 12-14 Long Acre, London WC2E 9LP. Price £5.

AMERICAN HISTORIAN Philip Katcher will be well known to most readers for his previous works on American history, particularly in Osprey's Men-at-Arms series. Those who have his Men-at-Arms titles will probably not wish to buy this book, for the 100 excellent colour paintings and further 100 line drawings and photographs are culled from that series, but, this reservation apart, the book can be warmly recommended.

Mr Katcher has concentrated on the uniforms and equipment of the armies fighting on American soil between 1753-1815, but there is also a great deal of information on organisation and training, and the whole forms a highly informative and readable account of the French, British and American armies of the period.

**Arms and Uniforms, The Second World War**, parts 1 and 2, by Liliane and Fred Funcken. Ward Lock Ltd, Warwick House, 116 Baker Street, London W1M 2BB. Price £3.95 each.

THESE TWO volumes are the first English editions of Liliane and Fred Funcken's books on the uniforms and equipment of

World War 2, which will eventually run to four volumes.

Part 1 concentrates on the years up to and following the outbreak of war in 1939, and includes details of the armies of France, Belgium, Czechoslovakia, Austria, Nazi Germany, Poland and Russia. Part 2 covers the 1941-3 period and is principally devoted to the forces of England, Germany and Russia.

Dress and field uniforms, service equipment, small arms and even tanks and aircraft are included, although the latter two sections are pretty useless, the colour illustrations being not only sketchy and lacking detail, but also frequently incorrectly proportioned and incorrectly coloured. L and F should stick to uniforms!

The German army has, of course, been endlessly covered in other books, and these two volumes contribute nothing new. Where they principally score is in their presentation of detailed information on French, Belgian, Czech and other less well-documented forces, many of which — particularly French colonial troops — are extremely colourful. And it is the colour which makes these books such incredibly good value for money. Each volume contains over 50 full pages of colour illustrations, each depicting half a dozen or more figures plus headgear, badges, epaulettes, arm of service insignia, small arms, collar patches, hat badges and practically anything else you can think of. In some cases the selection shown appears somewhat random but in most places is well chosen.

The accompanying text is extremely variable in quality, ranging from informative and accurate to superficial and dubious, and needs to be read with caution, particularly the various designations and technical specifications for tanks and aircraft.

Essentially these are 'pop' books which will probably be avoided by the serious student or historian of World War 2 but will undoubtedly find their way on to many a modeller's bookshelf none the less. Recommended with the above reservations.

**Sword & Lance**, edited by Alan Watson. Available from the editor, 36 Coniscliffe Road, Darlington, Co Durham. Price £2 for six issues.

THE TENTH issue of *Sword & Lance* magazine has just appeared in our offices and, not having mentioned it before, we thought we would bring it to the attention of all you military modelling, uniform and wargaming enthusiasts.

Professionally produced to A4 format, with masses of photographs and excellent line drawings, uniform sketches, etc, its contents are aimed primarily at the military historian (battle accounts, etc), uniform student, military modeller (lots of figure conversions) and wargamer. Book, kit, figure and game reviews are all featured, as well as a lively correspondence column.

To whet your appetite, the latest issue contains features on the British Army in the Seven Years' War, club news, Airfix 54 mm figure conversions, French eagles captured during the Peninsular War, the soldiers of Pharaonic Egypt, the 23rd Regiment of Bombay Native Infantry, World War 1 aerial wargaming, Hanoverian Militia of 1814 and the Kings German Legion, as well as reviews, etc. Well worth subscribing to.



# LETTERS TO THE EDITOR

## Javelin codes

FURTHER to Mr Tyler's letter in the November 1975 issue, regarding 64 Squadron's Javelin FAW 9s, I should like to answer his doubts concerning the accuracy of the fin code letters 'E' included in the Frog decal sheet.

Whilst agreeing that on the starboard side, the fin code letters invariably sloped towards the rear of the aircraft, their presentation on the port side varied: for example, on XH879 as can be seen in Mr Tyler's own photograph, the letter 'D' did indeed slope towards the rear. On XH887 the fin codes 'Q' appear to be upright, whilst on XH766 'E' the letter actually sloped towards the front of the aircraft. The accompanying photographs of 'E', taken at Waterbeach on September 16 1961, clearly show this presentation for both sides of the aircraft.

That the code appeared to be upright in the photo of the model to which Mr Tyler referred was due to photographic angle on the subject rather than any error in the kit decals.

Richard L. Ward, Farnborough.

## IPMS membership

I AM WRITING in my capacity as Berkshire Area Secretary of the IPMS (International Plastic Modellers Society) in the hope that my letter can be published as I feel it would benefit our society.

Since joining IPMS I have discovered that many of the modellers are people who enjoy their modelling but are of only average ability. So if anyone is thinking of joining IPMS I would like to reassure him that the society does not function for

'experts' only!

It is unfortunate that many would-be members run away with this idea, partly I suppose due to IPMS credits on articles and reviews in commercial magazines, and the high standards of IPMS exhibitions.

IPMS members are an amiable lot, and any newcomer is always made very welcome. Most improvements in modelling techniques are due to the exchange of ideas between members at meetings. Indeed, we do have some top modellers in our ranks, but they are certainly not aloof and all too willing to help any newcomer to the hobby personally. I can quote this from experience!

One point to remember is that today's average modeller may be tomorrow's expert. This can be achieved through becoming an IPMS member and giving your own modelling the benefit of others' experience.

Full details of IPMS membership can be obtained from Mr J. Salmon, 35 Clares Green Road, Spencers Wood, Nr Reading, Berks.

Noel Smith, Secretary,  
IPMS Berks Branch, Newbury.

## Beauforts

I WAS VERY interested to read Mr Pennycook's letter concerning Beauforts, possibly of No 51(F) OTU, bearing the codes HI. During the past ten years I have been researching the history of the Beaufort aircraft, both UK and American built, but I have come across only one previous reference to HI codes. In that, Ray Sturtivant mentioned a Beaufort coded HI-L, seen in 1944, which he thought could have been from No 63(F) OTU, a night fighter OTU which had

## Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

12 Beaufort 1s and 1As and 29 Beaufighter IIs among 61 machines of eight types. This unit was based at Honiely. Could we have a case here of the RAF adopting the Fleet Air Arm practice of allocating the initial letter of the base as the first letter of the unit code?

Incidentally, it is almost certain that the aircraft which Mr Pennycook recorded was not a Mk II Beaufort: there were virtually none around in April 1944.

May I be permitted to add, as a parting shot, that I would welcome from readers any evidence of the camouflage and markings of individual Beauforts at the OTUs from 1944 onwards.

R. Hayward, 40 Laurel Road,  
Locks Heath, Hants SO3 6QG.

## Essex aviation

I AM IN THE process of compiling a book on aviation in Essex during the Second World War, which will include a section on crashes and force-landings, and am seeking photos or snapshots of RAF aircraft which crashed in Essex. Should any reader be able to loan me photographs of this nature, I would be very pleased to hear from them. Any material loaned would be carefully handled, and returned promptly.

Ian C. Mactaggart, Craig-y-Llyn,  
Braintree Road, Gosfield, Halstead,  
Essex CO9 1PR.

## Diecast swopmeet

THE COVENTRY Diecast Model Club have announced a St Valentine's Day 'swopmeet' to be held on Saturday, February 14 1976, at Finham Community Centre, Brentwood Avenue, Finham, Coventry, Warks. Admission is 15p for adults and 10p for children, and doors open at 10 am. Go along for old Dinky toys, locos and other diecast models.

Two views of Javelin XH766 'E' as described in Mr Ward's letter.



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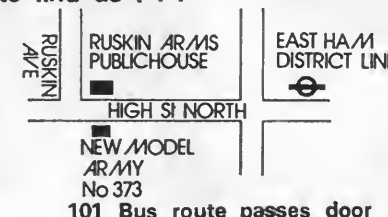
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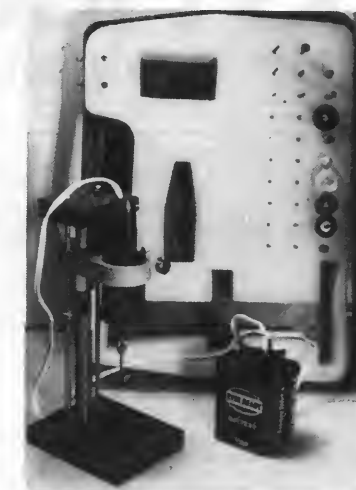
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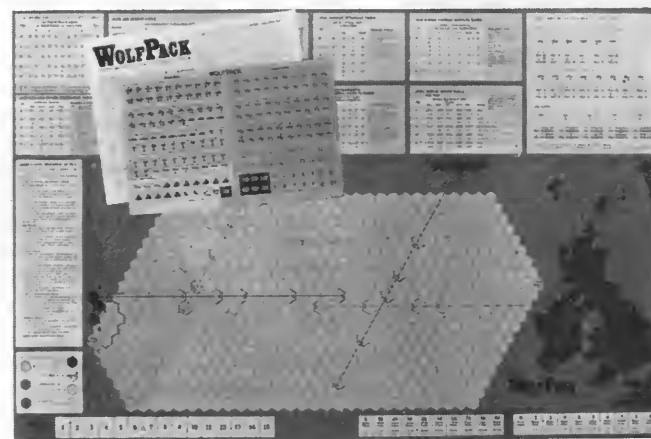
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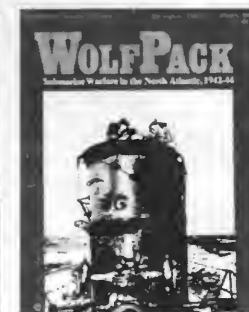
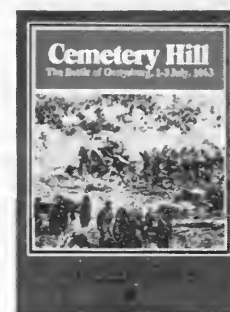
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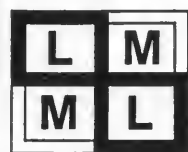
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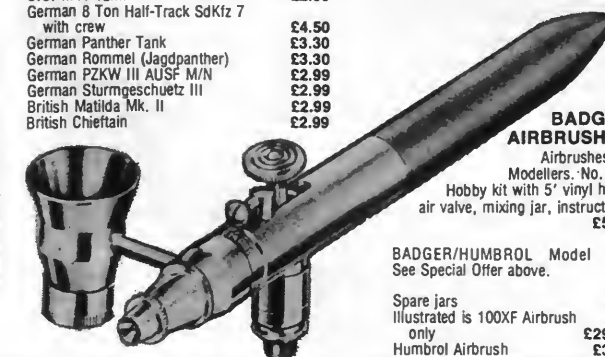
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we can only supply  
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New stock must,  
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A1/76

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## Britain's Railway Museums

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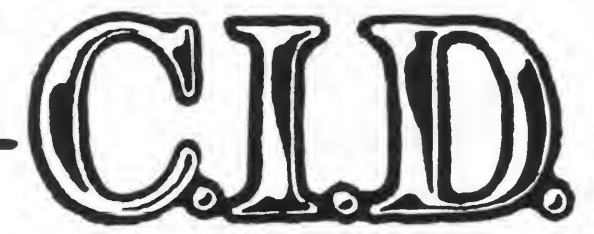
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No. 6

# What do you know about the police?



1. Does London Airport have its own police force?



2. What does "C.I.D." stand for?

3. Which is the highest rank held by a policewoman?



4. Is a chequered cap band the sign of a particular police rank?



5. How many police officers are there in England & Wales?  
a) Over 20,000.  
b) Over 50,000.  
c) Over 100,000.

This is the sixth in a series depicting the background, present-day work and development of Britain's police force. Watch out for the next in the series, which will appear shortly in this publication. For further information about the police write to Police Quiz, (Dept BJ1) Home Office, London SW1A 2AP.

1. No, the Metropolitan Police assumed the responsibilities of the Criminal Investigation Department in 1974.
2. At present, Commander in the Metropolitan Police, but women eventually wear chequered cap bands.
3. At present, Commander in the Metropolitan Police, but women eventually wear chequered cap bands.
4. No, all ranks in the police should have the same opportunities for promotion as men.
5. c.

ANSWERS





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## FORMA SHAPE

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### FORMA SHAPE

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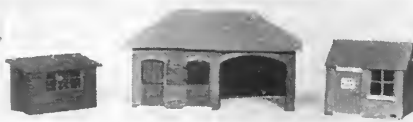
Three outbuildings, (a garden shed, stable and office for coal or goods yard) — Pair of terrace houses

THE SHAPE OF THINGS TO COME

Farm House — Factory Office Front — Damaged Cottage and walls — Church — Detached House, Barn — Military Accessories

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60 thou	40p	

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